

THE UNIVERSITY OF MEMPHIS  
2023-2024 GRADUATE CATALOG



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## 2023~2024 GRADUATE CATALOG

**Bill Hardgrave, Ph.D.**  
**President**

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UofM offers equal educational opportunity to all persons without regard to race, religion, sex, creed, color, national origin or disability. The University does not discriminate on these bases in recruitment and admission of students or in the operation of its programs and activities, as specified by federal laws and regulations.

The designated coordinators for University compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 are the Vice President for Student Affairs and the Equal Opportunity Compliance Officer. Information in this document will be provided in alternate format upon request. University of Memphis is an Equal Opportunity/Affirmative Action University. It is committed to education of a non-racially identifiable student body.

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# About Graduate School

## Deborah Tollefsen, PhD

Dean of the Graduate School  
901.678.4212

The University of Memphis is a Carnegie R1: Doctoral University – Very high research activity. The Graduate School's associated graduate programs housed in each college/school at the University of Memphis are the center of advanced study and research within the University. The basic objectives of the Graduate School are:

- To preserve and disseminate knowledge;
- To extend knowledge through research; and
- To prepare graduates to assume responsible and useful roles in a changing society.

The Doctor of Philosophy degree is awarded in applied physics, audiology and speech-language pathology, biology, biomedical engineering, business administration, chemistry, communication, computer science, counseling psychology, earth sciences, educational psychology and research, engineering, engineering management english, history, mathematical sciences, music, nursing, philosophy, psychology, social and behavioral sciences, and urban affairs. The degrees of Doctor of Audiology, Doctor of Education, Doctor of Liberal Studies, Doctor of Musical Arts, and Doctor of Social Work are awarded by the School of Communication Sciences and Disorders, the College of Education, the College of Professional and Liberal Studies, the College of Communication and Fine Arts, and the College of Arts and Sciences, respectively.

The College of Education also awards the degree of Education Specialist with a major in education. The Cecil C. Humphreys School of Law awards the Juris Doctor degree.

Over sixty-one Master's programs are offered through eight colleges and three schools. The degrees include Master of Arts, Master of Science, Master of Science in Nursing, Master of Architecture, Master of Arts in Liberal Studies, Master of Arts in Teaching, Master of Business Administration, Master of City and Regional Planning, Master of Education, Master of Fine Arts, Master of Health Administration, Master of Music, Master of Nonprofit Management, Master of Professional Studies, Master of Public Administration, Master of Public Health, Master of Social Work.

## Institutional Mission of the University

The University of Memphis is a **comprehensive, internationally recognized, urban public research university** preparing students for success in a diverse, innovative, global environment. Student success, service, innovation, diversity and inclusion, collaboration and accountability are core values at the University of Memphis.

The University is **classified as "Carnegie R1" or "Doctoral: Very High Research Activity and Community Engaged"** per the Carnegie Classification for Institutions of Higher Learning. With a focus on research and service benefitting communities locally and across the globe, we are home to nationally designated centers of excellence in cybersecurity research and education, transportation workforce development, mobile health data and five Tennessee centers of research excellence.

The UofM is dedicated to **providing the highest quality of education** to more than 21,500 students through 13 colleges and schools that offer more than 180 academic degree programs at the undergraduate, masters, doctoral and professional levels. The UofM awards approximately 4,500 degrees annually. Talented and innovative faculty have developed 31 undergraduate and 38 graduate programs in various disciplines that are ranked in the top 25 nationally. Our metropolitan setting has enabled us to build a nationally recognized internship program that facilitates the placement of undergraduate and graduate students throughout the community in nonprofit and for-profit organizations that specialize in healthcare, government, transportation and logistics, music and entertainment, medical devices, banking and the arts.

### Values

## **Accountability**

Integrity, transparency, excellence and the highest standards govern everything we do.

## **Collaboration**

We seek partnerships both within and beyond the University to enhance our actions and our outcomes.

## **Diversity and Inclusion**

Everyone is respected, included and given the opportunity to excel.

## **Innovation**

We consistently seek a better way, and we embrace challenges.

## **Service**

Our purpose is to benefit our students and society through knowledge and effort.

## **Student Success**

We provide every student with the opportunity to excel.

### **Role of the Graduate School**

The role of the Graduate School includes the following items:

- Advocate graduate education and graduate student policies both on campus and in the profession
- Strengthen the link between the research mission and graduate education at the university
- Establish criteria for review and approval of graduate faculty
- Provide oversight for policies and standards for graduate education at the campus level
- Advance graduate education and enhance the graduate student experience
- Review all proposals for new courses, new academic programs, and curricular and program modifications
- Review, formulate, and approve policies and regulations relating to graduate education, graduate student recruitment, admission, retention, and graduation policies
- Maintain equitable standards and policies across disciplines and program
- Provide guidance relative to issues and problems affecting graduate education and graduate students at the university
- Promote excellence for graduate students and faculty relative to the graduate education experience
- Provide an administrative framework to facilitate efficient admission, retention, and graduation processes for graduate students
- Promote the diversity of our student population and making graduate study accessible.
- Advocate for adequate library and other research resources and services to support graduate education

## **History**

The roots of The University date back to September 12, 1912, with the establishment and beginning of classes at West Tennessee State Normal School, which trained primary and secondary education teachers. However, the seeds for the normal school's creation were sown three years earlier, in 1909, when the Tennessee General Assembly passed a General Education law calling for the establishment and maintenance of three normal schools, one located in each of the three grand divisions of the state.

The eastern edge of Memphis became the site for West Tennessee State Normal School, which in 1929 became West Tennessee State Teachers College. In 1941, the college expanded its curriculum in liberal arts, and the name was changed to Memphis State College, an institution serving three to four thousand students. The undergraduate program was reorganized into three schools and a graduate school was added in 1951.

Memphis State achieved university status in 1957. On July 1, 1994, the name was officially changed to The University of Memphis.

## **Governing Body**

The governance and control of The University of Memphis is vested in the University of Memphis Board of Trustees, with state coordination by the Tennessee Higher Education Commission (THEC). The composition and powers of the Board are set forth in Tennessee Code Annotated 49-8-101 through 49-8-303. The UofM Board consists of ten members of which nine members are voting and one member is nonvoting. Eight of the members are appointed by the Governor, one is chosen from among the faculty by the faculty senate and one is a student appointed by the Board.

## **Accreditation**

The University of Memphis is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award baccalaureate, masters, educational specialist, doctoral, and graduate certificates. Contact the Southern Association of Colleges and Schools Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404.679.4500 for questions about the accreditation of the University of Memphis. Individual colleges, schools, and departments are accredited by the appropriate agencies.

## **Organization**

The schools and colleges that make up the university are the Graduate School, the College of Arts and Sciences, the Fogelman College of Business and Economics, the College of Communication and Fine Arts, the College of Education, the College of Health Sciences, the Herff College of Engineering, the Loewenberg College of Nursing, the College of Professional and Liberal Studies, the School of Communication Sciences and Disorders, The Kemmons Wilson School of Hospitality and Resort Management, and the School of Public Health.

## **The Memphis Community**

Memphis is one of the South's largest and most attractive cities. As a medical, educational, communication, distribution, and transportation center, Memphis offers a rich and full range of research opportunities and cultural experiences. The city, known worldwide for its musical heritage as home of the blues and the birthplace of rock and roll, has many fine restaurants, museums, and theaters, as well as one of the nation's largest urban park systems. Annual events include the St. Jude/Liberty Bowl Football Classic, Memphis in May International Festival, Kroger/St. Jude Tennis Tournament, Africa in April Cultural Awareness Carnival, St. Jude Memphis Golf Classic, and Carnival Memphis. Tourist attractions include the Beale Street Historic District, the National Civil Rights Museum, the Center for Southern Folklore, and Elvis Presley's home, Graceland. The medical complex in Memphis is the South's largest and one of the nation's foremost centers of medical research.

The University's modern and beautifully landscaped campus is centrally located in an attractive residential area of Memphis, with shopping, recreation, and entertainment centers nearby. In addition to the Main Campus facilities, the University has research and

athletic training facilities and married student housing on the South Campus, as well as teaching sites throughout West Tennessee.

# About Graduate Catalog

For students whose initial enrollment occurs Fall 2023 - Summer 2024, this Catalog is valid through Summer 2032.

**Individual program requirements described in the Graduate School Issue of the 2023-2024 Graduate Catalog of The University of Memphis are subject to change. Please consult your graduate advisor for changes that may occur before publication of the next issue of this Catalog.**

The University reserves the right to cancel or alter any part of this Catalog without notice (subject to the following):

The course offerings and requirements of the University of Memphis are continually under examination and revision. This Catalog presents the offerings and requirements in effect at the time of publication, but is no guarantee that they will not be changed or revoked. The specific courses or activities constituting the degree requirements for any programs are subject to state contractual terms and do not constitute a contract between the student and the University of Memphis.

The University of Memphis reserves the right to make changes as required in course offerings, curricula, academic policies and other rules and regulations affecting students to be effective whenever determined by the institution. These changes will govern current and formerly enrolled students. Enrollment of all students is subject to these conditions. Any fees, charges or costs, and all academic regulations set forth in this Catalog are subject to change at any time, and all courses, programs, and activities described in this Catalog are subject to cancellation or termination by the University of Memphis at any time.

The University of Memphis provides the opportunity for students to increase their knowledge by providing programs of instruction in the various disciplines and programs through faculty who, in the opinion of the institution, are trained and qualified for teaching at the college level. However, the acquisition of knowledge by any student is contingent upon the student's desire and ability to learn and the application of appropriate study techniques to any course or program. Thus, the University of Memphis must necessarily limit representation of student preparedness in any field of study to the competency demonstrated at that specific point in time at which appropriate academic measurements were taken to certify course or program completion.

The University of Memphis offers equal educational opportunity to all persons without regard to race, religion, sex, creed, color, national origin or disability. The University does not discriminate on these bases in recruitment and admission of students or in the operation of its programs and activities, as specified by federal laws and regulations. The designated coordinators for University compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 are the Vice President for Student Affairs and the Equal Opportunity Compliance Officer. Information in this document will be provided in alternate format upon request.

The University of Memphis is an Equal Opportunity/Affirmative Action University. It is committed to education of a non-racially identifiable student body.

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# University of Memphis Academic Calendar

The Academic Year begins with the start of the Fall semester and concludes with the end of the Summer semester of the succeeding calendar year. Used chiefly for event planning and scheduling, these calendars contain dates for these major term/part-of-term events: first/last day of classes, breaks/holidays, and Study Day/exams.

## [What is a Part of Term?](#)

## Fall 2023

### All Parts of Term

- Registration Period Begins: **April 3, 2023 / Monday**
- Commencement: [Check Commencement website](#)

### Full Part of Term

- First Day of Classes: **August 28, 2023 / Monday**
- Labor Day: **September 4, 2023 / Monday**
- Fall Break: **October 14-17, 2023 / Saturday-Tuesday**
- Thanksgiving Holidays: **November 22-26, 2023 / Wednesday-Sunday**
- Last Day of Classes: **December 6, 2023 / Wednesday**
- Study Day: **December 7, 2023 / Thursday**
- Exams: **December 8-14, 2023 / Friday-Thursday**

### 1st Half Part of Term

- First Day of Classes: **August 28, 2023 / Monday**
- Last Day of Classes/Exams: **October 13, 2023 / Friday**

### 2nd Half Part of Term

- First Day of Classes: **October 18, 2023 / Wednesday**
- Last Day of Classes/Exams: **December 6, 2023 / Wednesday**

## Spring 2024

### All Parts of Term

- Registration Period Begins: **November 13, 2023 / Monday**
- Commencement: [Check Commencement website](#)

### Full Part of Term

- M. L. King, Jr. Holiday: **January 15, 2024 / Monday**
- First Day of Classes: **January 16, 2024 / Tuesday**
- Spring Break: **March 4-10, 2024 / Monday-Sunday**
- Last Day of Classes: **April 24, 2024 / Wednesday**
- Study Day: **April 25, 2024 / Thursday**
- Exams: **April 26 - May 2, 2024 / Friday-Thursday**

### 1st Half Part of Term

- First Day of Classes: **January 16, 2024 / Tuesday**
- Last Day of Classes/Exams: **March 1, 2024 / Friday**

### 2nd Half Part of Term

- First Day of Classes: **March 11, 2024 / Monday**
- Last Day of Classes/Exams: **April 24, 2024 / Wednesday**

## Summer 2024

### All Parts of Term

- Registration Period Begins: **April 1, 2024 / Monday**

- Commencement: [Check Commencement website](#)

Pre Summer Part of Term

- First Day of Classes: **May 6, 2024 / Monday**
- Last Day of Classes: **May 23, 2024 / Thursday**
- Exams: **May 24, 2024 / Friday**

Full Part of Term

- First Day of Classes: **May 28, 2024 / Tuesday**
- Break: **June 19, 2024 / Wednesday**
- Break: **July 4, 2024 / Thursday**
- Last Day of Classes: **August 1, 2024 / Thursday**
- Exams: **August 2, 2024 / Friday**

1st Half Part of Term

- First Day of Classes: **May 28, 2024 / Tuesday**
- Break: **June 19, 2024 / Wednesday**
- Last Day of Classes: **June 27, 2024 / Thursday**
- Exams: **June 28, 2024 / Friday**

2nd Half Part of Term

- First Day of Classes: **July 1, 2024 / Monday**
- Break: **July 4, 2024 / Thursday**
- Last Day of Classes: **August 1, 2024 / Thursday**
- Exams: **August 2, 2024 / Friday**

# Minimum Graduate Degree Requirements

The University of Memphis offers Master's degrees, Education Specialist degree, Doctoral degrees and graduate certificates.

Graduate students are expected to be aware of and to comply with the minimum requirements for the degrees they are pursuing as outlined in the graduate catalog. In addition to the minimum degree requirements, students are expected to conform to any additional requirements set by the student's department, college, school, or academic unit. The Graduate School sets minimum standards to which all the diverse graduate programs across the university must adhere. Individual colleges, schools, and graduate programs are encouraged to set more stringent requirements as necessary to meet their accreditation and student needs.

Please see Degree Programs for individual program requirements.

Forms referenced in the minimum degree requirements page can be found here:

[https://www.memphis.edu/gradschool/resources/forms\\_index.php](https://www.memphis.edu/gradschool/resources/forms_index.php)

## Minimum Requirements for Master's Degrees

A master's degree program shall generally include 30-36 semester hours of course work, although some programs require more. Refer to the appropriate program description for specific requirements. The student's program must be approved by the major academic unit. A student may be required to take courses beyond the minimum to ensure balance and depth in the discipline.

A minimum of 70% of the total required hours must be provided by 7000 or 8000 level courses. No more than 12 hours of workshop courses and independent study courses may be applied to a master's degree. Individual academic departments may allow fewer workshop or independent study hours in their programs.

The maximum amount of combined hours of transfer credit, credit by examination, course validation and experiential learning that can be used to fulfill degree requirements is two-thirds of the number of hours required for the degree.

## Comprehensive Examination

Before being recommended for graduation, every candidate for the master's degree who does not write a thesis is required to pass a final comprehensive examination. Many programs also require a comprehensive examination for those students writing a thesis. The comprehensive exam may take different forms in different programs. For instance, some professional programs have a culminating experience that serves as the comprehensive examination.

Some programs give the comprehensive examination within a short time period during or near the last semester of coursework or after all coursework is completed. In some professional programs the comprehensive examination is given during the calendar year in which the student expects to graduate. Other programs give a series of exams over several semesters. In all cases, comprehensive exams should be completed late enough in the student's program to ensure full coverage of content areas represented by required coursework. In programs that do not require comprehensive examination for thesis writers, the thesis defense will include broad questions covering the breadth of coursework as well as the thesis content and will be used to satisfy the comprehensive examination requirement.

Comprehensive examinations are administered only to students in good standing and may be oral, written, or both. The result of the exam (positive or negative) must be communicated to the Graduate School on the Comprehensive Results Form within the same semester the exam was taken.

Information regarding the content and form of the comprehensive exam, as well as information about protocols and procedures for administration of comprehensive examinations, can be obtained at the departmental level. It is the student's responsibility to familiarize themselves with departmental comprehensive exam requirements.

A student who does not perform satisfactorily on the first comprehensive examination will be given an opportunity to take a second examination at the next regularly scheduled examination period. For serial examinations, given over several semesters,

see the specific program repeat policies. The academic department may recommend appropriate coursework, which the student will take in preparation for retaking the exam. A second failure results in termination, which can be appealed. The retention appeals process is formalized and must be followed in all cases. See the section of this catalog on Academic Performance Termination and Appeals.

## Admission to Candidacy

Before an applicant will be officially admitted to candidacy for a master's degree, the student must have satisfied the following requirements:

1. The student must pass a comprehensive exam if they are not writing a thesis or their department requires thesis students to also pass a comprehensive exam. A comprehensive exam results form must be on file with the graduate school if the student is required to take a comprehensive exam.
2. The student must have a cumulative GPA of 3.0 on all graduate work undertaken at The University of Memphis whether or not the courses are listed on the candidacy form. Grades of "D" or "F" are not accepted for any graduate degree credit, but these grades will be computed in the GPA. No more than seven (7) hours of "C+," "C," or "C-" will be counted toward degree requirements.
3. The student must submit a Master's Degree Candidacy Form

Expired course grades may be removed from the calculation of a given student's cumulative GPA. Please see the Expired Course Grade Removal policy here: [http://www.memphis.edu/gradschool/resources/forms\\_index.php](http://www.memphis.edu/gradschool/resources/forms_index.php)

If a student wishes to substitute a course for a required course, the substitution must be approved by the student's advisor or the program coordinator on the Course Substitution Form. The form must accompany the candidacy form.

## Thesis Requirements

Most academic departments provide students both a thesis and a non-thesis option (see department descriptions). A thesis of 3 to 6 semester hours may be presented as partial completion of degree requirements. Students must enroll for thesis credit each academic semester until the thesis is completed, regardless of how many hours the program will accept.

Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write. [https://www.memphis.edu/gradschool/current\\_students/td-guide.php](https://www.memphis.edu/gradschool/current_students/td-guide.php). An approved Thesis/Dissertation Proposal Form must be filed with any necessary human or animal subject approvals before any research is undertaken. See the section on "Regulatory Issues" for more information.

## Thesis Committee

The student will select a thesis committee (minimum of three members) made up of graduate faculty approved by the head of the academic unit and/or the college director. The chair of the thesis committee must hold full or associate graduate faculty status. Only one external graduate faculty member may serve as a voting member of a thesis committee. "External" refers to graduate faculty status given to faculty who are not faculty of the University of Memphis  
[https://www.memphis.edu/gradschool/resources/gradfac\\_guidelines.php](https://www.memphis.edu/gradschool/resources/gradfac_guidelines.php)

## Defense of the Thesis

Students must be enrolled in the semester during which they defend the thesis. Upon completion of the thesis, the student must successfully complete an oral defense administered by the student's advisory committee and the results reported to the Graduate School. All committee members must be present at the examination and the results are determined by a unanimous vote of the committee.

If the oral exam encompasses both the comprehensive exam and the defense, the results should be reported separately to the graduate school. In this case, the thesis defense will include broad questions covering the extent of coursework as well as the thesis content.

The final draft of the thesis must be approved by all members of the student's committee. After the successful defense, a copy of the defended and corrected thesis must be submitted to the Graduate School along with the committee approval form. This copy must contain all corrections which may have been given to the student during the final defense.

After the Graduate School has reviewed the final draft, the student must make all additional corrections. At such time, the student will convert the final corrected document into a PDF version and upload to the Electronic Thesis/Dissertation (ETD) archival system. See the Graduate School Thesis/Dissertation Preparation Guide for instructions on how to upload to the ETD system. [https://www.memphis.edu/gradschool/current\\_students/td-guide.php](https://www.memphis.edu/gradschool/current_students/td-guide.php)

Students who unsuccessfully defend their thesis will be assigned a "U" (unsatisfactory). The department will then initiate the termination process. See the section of this catalog on Academic Performance Termination and Appeals.

## **Thesis Credit**

Credit will be posted upon completion and acceptance of the thesis. No more than six (6) hours will be allowed for a master's thesis, even though the student may have been required to register for additional hours in order to maintain continuous enrollment. If a student elects not to complete the thesis, a retroactive drop (or withdrawal) must be processed for the last term of enrollment in thesis credit to reflect the change of program on the student's transcript.

## **Enrollment Requirements**

Students must be enrolled during the semester in which they defend the thesis. Colleges, schools, and departments may require enrollment during the semester in which comprehensive exams are taken; check with your program for details.

## **Continuous Enrollment Policy**

The continuous enrollment policy applies to theses, capstone projects, and all other culminating experiences. Most programs require at least one culminating experience course; see specific program requirements for details. A student must be enrolled for at least 1 hour each fall and spring semester until the thesis or project is complete. A student must be enrolled in the summer semester if the thesis will be completed then. The only exception to this policy is if the student's major professor is on leave or otherwise unavailable. In such cases the approval of the appropriate college director and the Dean of the Graduate School is required.

In case of serious medical or other personal circumstances, students may request a leave of absence, subject to the approval of the program graduate coordinator, the college director of graduate studies, and the Dean of the Graduate School.

For information on leave of absence see: Leave of Absence.

Requests for leave of absence will not be granted without appropriate documentation. If a leave of absence is granted, the dates of leave do not count toward program time limitations.

## **Time Limitation**

All requirements for Master's degrees requiring up to 36 hrs must be completed in eight years. All requirements for Master's degrees that require more than 36 hrs must be completed in ten years. Grades earned in courses that are older than program time limits will be shown on the transcript and will be calculated in the cumulative GPA unless a request for expired course grade

removal has been granted, but will not be accepted for graduation purposes unless validation has occurred or been waived as described in the Academic Regulations section of the Graduate Catalog. See Course Validation.

## Graduation

In order to graduate the student must:

1. "Apply to Graduate" by the appropriate deadline (see Registrar's website for deadlines).
2. Pass comprehensive exams, if required. The comprehensive exam result form must be on file with the Graduate School.
3. Submit all thesis documents to the graduate school if a thesis is required, including: a thesis committee form, a thesis proposal defense form, and a thesis defense form. Theses must be submitted electronically.
4. There must be a Masters Degree Candidacy form on file with the graduate school
5. have a cumulative GPA of 3.0 on all graduate work undertaken at The University of Memphis whether or not the courses are listed on the candidacy form. Grades of "D" or "F" are not accepted for any graduate degree credit, but these grades will be computed in the GPA. No more than seven (7) hours of "C+," "C," or "C-" will be counted toward degree requirements.

All requirements of the Graduate School, the student's college, and the academic department must be met.

Please notify the Graduate School Graduation Analyst of any changes in name or address. Students who are graduating will receive notification from the Commencement Office explaining graduation ceremony requirements periodically throughout the semester.

### Minimum Requirements for Doctoral Degrees

Doctoral degrees require at least 72 credit hours beyond the bachelor's degree; however, many programs require additional hours. Specific requirements for the doctoral degree vary by academic department. A student may be required to take courses beyond the minimum to ensure balance and depth in the discipline.

No more than 15 post-baccalaureate hours of 6000 level courses may be applied to a doctoral degree. The last 30 hours of credit must be earned at the University of Memphis. Of the final 30 hours, no more than the maximum allowed by the program may be dissertation hours. A minimum of 6 hours of dissertation credit is required.

The maximum amount of combined hours of transfer credit, credit-by-examination, course validation and experiential learning that can be used to fulfill degree requirements is two-thirds of the number of hours required for the degree.

## Comprehensive Examination

Before being recommended for candidacy, every candidate for the doctorate is required to pass a comprehensive examination.

The comprehensive exam may take different forms in different programs. For instance, some programs give the comprehensive examination within a short time period during or near the last semester of coursework or after all coursework is completed. In some professional programs the comprehensive examination is given during the calendar year in which the student expects to graduate. Other programs give a series of exams over several semesters. In all cases, comprehensive exams should be completed late enough in the student's program to ensure full coverage of content areas represented by required coursework. Comprehensive examinations are administered only to students in good standing and may be oral, written, or both.

The comprehensive examination will normally contain both written and oral components, covering the major and collateral fields of study. Decision on the examination component(s) will be made by the program faculty members to preserve subject area competency, and any waiver for an individual student of written or oral component will be documented and included in the record. The result of the exam (positive or negative) must be communicated to the Graduate School on the Comprehensive Results Form within the same semester the exam was taken.

Information regarding the content and form of the comprehensive exam, as well as information about protocols and procedures for administration of comprehensive examinations, can be obtained at the departmental level. It is the student's responsibility to familiarize themselves with departmental comprehensive exam requirements.

If a student fails the comprehensive exam, the student may take it a second time. A second failure results in termination, which can be appealed. The retention appeals process is formalized and must be followed in all cases. See the section of this catalog on Academic Performance Termination and Appeals.

## Admission to Candidacy

Before an applicant will be officially admitted to candidacy for a doctoral degree, the student must have satisfied the following requirements:

1. The student must pass a comprehensive exam and a comprehensive results form must be on file with the graduate school.
2. The student must submit a Doctoral Degree Candidacy form.
3. The student must have a cumulative GPA of 3.0 on all graduate work undertaken at The University of Memphis whether or not the courses are listed on the candidacy form. Grades of "D" or "F" are not accepted for any graduate degree credit but these grades will be computed in the GPA. No more than 7 hours of "C+," "C," or "C-" will be counted toward degree requirements.

Forms can be found here: [https://www.memphis.edu/gradschool/resources/forms\\_index.php](https://www.memphis.edu/gradschool/resources/forms_index.php)

Expired course grades may be removed from the calculation of a given student's cumulative GPA. Please see the Expired Course Grade Removal policy here: <https://catalog.memphis.edu/content.php?catoid=27&navoid=1564#expired-course-grade-removal->

Expired courses will, however, still appear on the student's transcript. A student deemed eligible for expired course grade removal by their academic department must have a written plan for degree completion, developed with their academic advisor, in place before the student grade record can be updated. (Grades for these expired courses will have an "X" assigned with the letter grade.) Advisors can fill out a grade expiration form found here: [http://www.memphis.edu/gradschool/resources/forms\\_index.php](http://www.memphis.edu/gradschool/resources/forms_index.php).

Doctoral students who have completed comprehensive exams (or other program-based milestones similar to comprehensive exams) will be considered Late Stage Doctoral once the Graduate School is notified of this completion by the academic department.

All doctoral students at this late stage will be considered enrolled as full-time regardless of number of hours registered for the term.

## Dissertation

An acceptable dissertation is a requirement for all doctoral degrees. The dissertation must represent a significant scholarly effort that culminates in an original contribution to the field of inquiry. It should reflect the candidate's ability to conduct independent research and interpret in a logical manner the facts and phenomena revealed by the research. The dissertation must meet the specific regulations of the academic department in which the student is majoring and those of the Graduate School. Consult the academic department for acceptable formats. Students should also familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write. [https://www.memphis.edu/gradschool/current\\_students/td-guide.php](https://www.memphis.edu/gradschool/current_students/td-guide.php)

## Dissertation Committee

The student will select a dissertation committee (minimum of four members) made up of graduate faculty approved by the head of the academic unit and/or the college director. The chair of the dissertation committee must hold full graduate faculty status. Only one external graduate faculty member may serve as a voting member of a dissertation committee. "External" refers to

graduate faculty status given to faculty who are not faculty of the University of Memphis  
[https://www.memphis.edu/gradschool/resources/gradfac\\_guidelines.php](https://www.memphis.edu/gradschool/resources/gradfac_guidelines.php)

Students should consult with their department if they wish to have University of Memphis faculty outside of their department serve on their dissertation committee. A dissertation committee form must be filed with the graduate school and updated when changes are made to the committee.

## **Dissertation proposal**

The dissertation proposal (or prospectus) is developed under the guidance of the dissertation committee. All members of the dissertation committee must approve the proposal (prospectus) and the Dissertation Proposal Defense form must be filed with the Graduate School.

If human or animal subjects are involved, the appropriate approval forms must accompany the approved Thesis/Dissertation Proposal form. Approval from the institutional review board must be secured before undertaking any research. See the section on "Regulatory Issues"

## **Defense of Dissertation**

After the completion of the dissertation and all other prescribed work for the degree, candidates will be given a final oral examination on the dissertation and its relation to the candidate's major field of study. The student's dissertation committee will conduct this exam. All members must be present (physically or virtually) at the examination. If the student's performance on this examination is satisfactory as judged unanimously by the committee, all requirements for the degree will have been completed.

Students must be enrolled in the semester during which they defend the dissertation.

Students who unsuccessfully defend their dissertation will be assigned a "U" (unsatisfactory), at which time the termination process will be initiated. See the section of this catalog on Academic Performance Termination and Appeals.

## **Submission of the Dissertation**

The final draft of the dissertation must be approved by all members of the dissertation committee. After the successful defense, a copy of the defended and corrected dissertation must be converted into a PDF and submitted to ProQuest and the committee approval form submitted to the Graduate School. After the Graduate School has reviewed the final draft in ProQuest, the student must make all additional corrections. See the Graduate School Thesis/Dissertation Preparation Guide for instructions on how to upload the final document. [https://www.memphis.edu/gradschool/current\\_students/td-prep.php](https://www.memphis.edu/gradschool/current_students/td-prep.php)

After the dissertation has been approved by the Graduation Analyst, the dissertation will be delivered to ProQuest electronically. The student will then complete the Survey of Earned Doctorates and send confirmation to the Graduation Analyst that the survey has been completed. The abstract will be published by ProQuest.

## **Dissertation Credit**

Credit will be posted upon the completion and acceptance of the dissertation. A minimum of 6 hours of dissertation credit is required. No more than the maximum number of semester hours for dissertation accepted by the academic department will be counted towards the degree, even though the student may have registered for additional hours in order to maintain continuous enrollment.

## **Continuous Enrollment**



Doctoral candidates must register for dissertation credit each academic semester (fall and spring) until the dissertation is completed. Students must enroll in the summer semester if they plan to complete and defend their dissertation then. The only exception to this policy is if the student's major professor is on leave or otherwise unavailable. In such cases the approval of the appropriate college director and the Dean of the Graduate School is required.

In case of serious medical or other personal circumstances, students may request a leave of absence, subject to the approval of the program graduate coordinator, the college director of graduate studies, and the Dean of the Graduate School. See the section of this catalog on Leave of Absence

Requests for leave of absence will not be granted without appropriate documentation. If the leave of absence is approved, the dates of absence will not count toward program limits.

## Time Limitations

Doctoral degrees must be earned within 12 consecutive years. All course work must be completed within 10 years of the student's original admission to a doctoral program. The student may take a further two years of dissertation credit. Grades earned in courses that are older than program time limits will be shown on the transcript and will be calculated in the cumulative GPA unless a request for expired course grade removal has been granted, but will not be accepted for graduation purposes unless validation has occurred or been waived as described in the Academic Regulations section of the Graduate Catalog. See the section of this catalog on Course Validation.

## Graduation

To be certified for graduation, the student's entire program, including the dissertation, must be acceptable to the dissertation committee, department chair and/or director of graduate studies in the student's college, and the Dean of the Graduate School.

The student must have a cumulative GPA of 3.0 on all graduate work undertaken at The University of Memphis whether or not the courses are listed on the candidacy form. Grades of "D" or "F" are not accepted for any graduate degree credit but these grades will be computed in the GPA.

No more than 7 hours of "C+," "C," or "C-" will be counted toward degree requirements.

In order to graduate the following forms must be filed with the Graduate School:

1. Comprehensive Exam Form—Filed in the semester in which the comprehensive exam is completed.
2. Dissertation Committee Form—Filed at the time of constitution and updated with any changes.
3. Dissertation Proposal Defense Form—Filed during the semester in which the proposal defense is completed.
4. The Dissertation Defense Results form—Filed immediately after the defense.
5. The Doctoral Degree Candidacy Form—Filed at the time of candidacy
6. Students must "Apply to Graduate" by the deadline available on-line for the term the dissertation will be complete.

Forms can be found here: [https://www.memphis.edu/gradschool/resources/forms\\_index.php](https://www.memphis.edu/gradschool/resources/forms_index.php)

Please notify the Graduate School Graduation Analyst of any changes in name or address. Students who are graduating will receive notification from the Commencement Office explaining graduation ceremony requirements periodically throughout the semester.

# Admission Regulations

Admission to the Graduate School is open to anyone holding a bachelor's, master's, or doctoral degree from an accredited college or university. In cases, where a program's accrediting body allows alternate admissions standards, exceptions may be made. Applicants should have completed undergraduate or graduate work of sufficient quality and scope to enable them to successfully pursue graduate study. The University of Memphis offers equal educational opportunity to all persons without regard to race, religion, sex, creed, color, national origin or disability.

Students are admitted to the University of Memphis through a cooperative effort of the Graduate School and the departments, colleges, and schools of the University. When the Graduate School receives the student's application material, an official file is established and reviewed. The department then reviews the application file and makes a recommendation to the Graduate School. The Graduate School notifies applicants as soon as a decision has been reached.

Applicants are required to meet admissions criteria established by the Graduate School in order to enroll in graduate courses. In order to be admitted to a degree program in any academic unit, applicants are also required to meet any additional standards set by the unit or college. Applicants are selected on a competitive basis and, therefore, admission is not granted to all applicants who meet only the minimum requirements. Past behavior and classroom performance can be considered in admissions decisions. Some academic programs have individual application forms and additional requirements such as portfolios, proficiency examinations, auditions, etc.

Applicants are selected on a competitive basis and, therefore, admission is not granted to all applicants who meet only the minimum requirements. Departments consider a variety of factors in making admission decisions including program space and resource issues.

**Individual program requirements described in the University of Memphis Graduate Catalog 2023-2024, are subject to change. Please contact the academic department or the Graduate School for changes.**

Graduate admission applications will only be accepted through the **Graduate Admissions application system**.

**Prospective students should check with the appropriate program for specific deadlines and admissions requirements.**

For admission to a degree program, applicants should allow approximately three to six weeks from date of receipt of complete application for the necessary credentials to be processed by the appropriate degree program and the Graduate School. Applicants are urged to apply early to ensure full consideration. Late domestic applicants may be admitted as graduate non-degree students and as such are not guaranteed placement in specific programs; some classes may be closed to non-degree students. International applicants should allow at least four months for the application process; International students matriculated into degree programs at other educational institutions in the United States may be eligible for admission as non-degree students into the University of Memphis. International students who are using an I-20 from the University of Memphis to obtain their F1 visa, however, cannot be admitted as non-degree students.

International students matriculated into degree programs at other educational institutions in the United States may be eligible for admission as non-degree students into the University of Memphis. International students who are using an I-20 from the University of Memphis to obtain their F1 visa, however, cannot be admitted as non-degree students.

All applications must be accompanied by a non-refundable application fee (\$35.00 for domestic applicants; \$60.00 for international applicants), unless previously paid. Applications received without the application fee will not be processed.

See "Admission of International Students" for details about additional requirements for international applicants.

All credentials become the property of the University and will not be forwarded or returned. If the applicant does not enroll, credentials will be maintained in active files for 12 months, after which they will be destroyed. After that time, candidates must reapply for admission and submit a new set of credentials if they wish to be admitted to the Graduate School.

## Admission to Masters Degree Programs

The following Graduate School admissions requirements are minimum standards that identify the pool of master's level applicants from which each academic unit makes its selection. International applicants should consult "Admission of International Students" for further requirements.

Applicants will be selected on a competitive basis and, therefore, admission will not be granted to all applicants who meet only the minimum requirements. Some departments require higher standards or additional items such as portfolios, proficiency examinations, auditions, etc.

1. **Baccalaureate Degree:** The applicant must provide an official transcript showing that a bachelor's degree was awarded by an accredited college or university. In cases, where a program's accrediting body allows alternate admissions standards, exceptions may be made. If you are a UofM undergraduate student applying to Graduate School at UofM, you do not need to request that an official transcript be sent to Graduate Admissions. This office has access to your transcript. The applicant must have earned an acceptable grade point average. In addition, transcripts from any other college or university attended may be requested. Only transcripts received directly from an issuing institution are considered official. Admission decisions may be made on the basis of unofficial transcripts, but official transcripts must be on file with the graduate school by the 14<sup>th</sup> day of the first semester otherwise a registration hold will be placed on the student's account. Discrepancies between unofficial and official transcripts are grounds for termination.
2. **Entrance Examinations:** New applicants may be required by the individual program to have taken an appropriate entrance examination within five years of the application date. Contact the appropriate program for information on which test(s) and what score(s) are acceptable. Scores on MAT exams written in less than two-month intervals are not acceptable. Admission decisions may be made on the basis of unofficial test scores, but official test scores must be on file at the graduate school by the 14<sup>th</sup> day of the first semester of classes. Failure to produce official documents by this deadline will result in a registration hold on the student's account. Discrepancies between unofficial and official test scores are grounds for termination. The University of Memphis institution code number for reporting ETS scores is R-1459. See program descriptions for more information on requirements. Some programs may waive the entrance examination requirement for applicants with exceptional credentials, extensive professional experience, or a prior graduate degree from an accredited institution. These waivers are at the discretion of the academic program. See individual program descriptions for details.
3. **Program Requirements:** Many academic units have additional requirements for admission. See program descriptions for more information on requirements.

## Admission to Doctoral Degree Programs

The following Graduate School admissions requirements are minimum standards that identify the pool of doctoral level applicants from which each academic unit makes its selection. International applicants should consult "Admission of International Students" below for further requirements.

Applicants will be selected on a competitive basis and, therefore, admission will not be granted to all applicants who meet only the minimum requirements. Some departments require higher standards or additional items such as portfolios, proficiency examinations, auditions, etc.

1. **A Baccalaureate or Master's Degree as specified by the program:** The applicant must provide an official transcript showing a bachelor's or master's degree, depending on program requirements, was awarded by an accredited college or university. In cases, where a program's accrediting body allows alternate admissions standards, exceptions may be made. If you are a UofM undergraduate student applying to Graduate School at UofM, you do not need to request that an official transcript be sent to Graduate Admissions. This office has access to your transcript. Admission decisions may be made on the basis of unofficial transcripts, but official transcripts must be on file with the graduate school by the 14<sup>th</sup> day of the student's first semester, otherwise a registration hold will be placed on the student's account. Discrepancies between unofficial and official transcripts are grounds for termination.

2. **Entrance Examinations:** New applicants may be required by the individual program to have taken an appropriate entrance examination within five years of the application date. Contact your program for information on which tests and what score(s) are acceptable. Admission decisions may be made on the basis of unofficial test scores, but official test scores must be on file at the graduate school by the 14<sup>th</sup> day of the student's first semester of classes. Failure to produce official documents by this deadline will result in a registration hold on the student's account. Discrepancies between unofficial and official test scores are grounds for termination. The University of Memphis institution code number for reporting ETS scores is R-1459. Some programs may waive the entrance examination requirement for applicants with exceptional credentials, extensive professional experience, or a prior doctoral degree from an accredited institution. See individual program descriptions for details.
3. **Program Requirements:** Many academic units have additional requirements for admission. See program descriptions for more information on requirements.

## Admission to Education Specialist Program

The Education Specialist degree is designed for the educator-practitioner who desires post-master's training but who does not wish to earn a doctorate. This program is administered by the College of Education; please refer to the appropriate section of this Catalog for a more complete description or contact the dean's office in the College of Education for additional details.

## Admission of International Students

The University of Memphis believes that the presence of international students on campus enriches the educational environment for all. The University of Memphis is authorized under Federal law to enroll non-immigrant alien students on the F-1 student visa. **We accept only students with the equivalent of a U.S. bachelor's degree--16 years of formal schooling.**

Prospective students must apply to the Graduate School and the respective department (some departments require an additional application). Individual departments may have different admission requirements and application deadlines. It is essential that you familiarize yourself with departmental information.

Applications are available for on-line submission at [https://www.memphis.edu/graduateadmissions/future/apply\\_grad.php](https://www.memphis.edu/graduateadmissions/future/apply_grad.php). A non-refundable application and processing fee of sixty dollars U.S. (U.S. \$60.00) is required of every international applicant, unless previously paid. Payment of the application fee is by credit card.

Although admission decisions may be made on the basis of unofficial documents, final official transcripts, official test scores, and official credential evaluations must be on file in the Graduate Admissions Office by the 14<sup>th</sup> day of the students first semester. Official documents are those sent directly from the institution or agency to the University of Memphis. Personal copies are not official. Any discrepancies between unofficial and official documents may be grounds for termination.

When Graduate Admissions receives your application materials, an official file is established and reviewed. Your requested department then reviews your application and makes a recommendation to Graduate Admissions. You will be notified as soon as a decision has been reached.

**English Conditional Admission:** International students are required to demonstrate a strong grasp of the English language before admission into graduate programs. Conditional admission may be granted depending on individual academic departmental policy. If English conditional admission is offered, students will need to register for English skills assessment and take instructional sessions (if required as a result of that assessment) through the University's Intensive English for Internationals (IEI) program ([www.memphis.edu/iei](http://www.memphis.edu/iei)). Upon successful completion of the requisite sessions, as determined by IEI, the student's English skills will be considered up to standard and the TOEFL/IELTS/PTE requirement may be waived depending on specific academic department policy. The student can then proceed into their graduate academic program. Please note that in order to have a complete application packet, students seeking English conditional admission will need to simultaneously apply for the IEI program through the link above, to the Graduate School by clicking **here**, and to their academic program by visiting the department website.

Please note that in order to have a complete application packet, students seeking English conditional admission will need to apply for the IEI program. The application is embedded in the Graduate School application found [here](#). Students should talk with their academic program coordinator prior to applying for conditional admission. Please note that a student cannot be a graduate assistant (GA) until they have been fully admitted and have begun their graduate academic program.

### Additional Admission Requirements

In addition to general admissions requirements, international students must provide the following items:

**English Proficiency Exam Scores:** All applicants who will be attending the University on a student visa who are not native speakers of English and are not graduates of The University of Memphis must supply a minimum overall score on one of the exams noted below. Some degree programs require a higher overall score. Please check respective academic department webpages for their requirements. Language proficiency scores must be verified in order to issue an I-20. Students must have their scores sent from the testing agency to The University of Memphis using institutional code: 1459 or you can make your test scores available to us for verification by choosing the University of Memphis at the time of the exam.

Minimum scores for admission

**TOEFL:** A minimum score of 550 on the paper, a 210 on the computer-based, or 79 on the internet-based Test of English as a Foreign Language (TOEFL) is needed.

**IELTS:** The minimum acceptable IELTS score is 6.0.

**PTE:** The minimum acceptable PTE score is 53.

**Duolingo:** A minimum score of 100 is required (with a minimum subscore of 80)

### Minimum scores for admission in spring 2024 and future terms

- Duolingo English Test-110 or higher on the overall score.
  - TOEFL (Test of English as a Foreign Language) 550 or higher on the paper version, 80 or higher on the internet-based test
  - IELTS (International English Language Testing System)- 6.5 or higher
  - PTE (Pearson Test of English) - 59 or higher
- 
- **Evaluation of Credentials:** Applicants whose highest degree is from a foreign university may be required to have their credentials evaluated by any credentialing agency listed on the National Association of Credential Evaluation Services web site ([www.naces.org](http://www.naces.org)). Please check the website of the specific program to determine if this evaluation is required. Admission may be made on the basis of unofficial credential documents, but students must have an official credential report sent to the University of Memphis graduate school by the 14<sup>th</sup> day of the student's first semester. Failure to do so will result in a registration hold being placed on the student's account.
  - **Health Certificate:** Within 30 days from the first day of classes, each international student must submit a certificate from a licensed U.S. physician or other qualified U.S. medical authority verifying freedom from tuberculosis. Failure to do so shall result in denial of enrollment. In the event that a student either has tuberculosis or has potential tuberculosis requiring medical treatment, continued enrollment will be conditional upon the determination by a licensed U.S. physician that such enrollment does not present a risk to others and upon the student's compliance with any medical treatment program.
  - **Health Insurance:** All international students must purchase health insurance before they are allowed to enroll. [Click here](#) for more information.
  - **Affidavit of Support and Financial Statement:** An applicant who holds or will require an "F-1" student visa must supply, on the form provided by the University, sufficient evidence of financial support for the applicant and all

members of his/her family who will accompany the applicant to Memphis. This requires that the applicant certify that his/her intent is to attend the University full-time and that no employment, other than assistantships, will be required. An affidavit of support and financial statement are not required for admission; however, international students (F-1) requiring issuance of Form I-20 must supply sufficient evidence of financial support for the applicant and all members of his/her family requiring issuance of dependent Form I-20.

Please contact academic departments for information on additional requirements and graduate assistantships.

Advisors for graduate students are typically department based. Often, departments will assign advisors to students upon admission based on areas of interest. After students have matriculated and enrolled in coursework under various faculty members, students may select a different advisor. To inquire about your academic advisor, please contact the graduate coordinator or department chair for your program.

## Readmission

Once accepted into a degree program, a student is expected to enroll every semester thereafter (excluding summer sessions) and make satisfactory progress toward the degree. A student who does not enroll for a fall or spring semester must apply for readmission. Submission of a readmission application does not ensure acceptance. An application for readmission may be rejected or additional requirements may be imposed on the student. A readmitted student must follow the rules, prerequisites, and degree requirements listed in the Graduate Catalog.

Students writing a thesis or dissertation or engaged in a culminating project must enroll on a continuous basis (fall and spring) until the thesis, dissertation, or project is complete. If, however, a student completes a thesis, dissertation, or project during a summer session, they must be enrolled in the applicable credit during the summer.

## Other Admission Regulations

### Continuous Enrollment

Students writing a thesis or dissertation or engaged in a culminating or capstone project must enroll on a continuous basis (Fall and Spring) until the thesis, dissertation, or project is complete. Most programs require at least one culminating experience course; see specific program requirements for details. A student must be enrolled for at least 1 hour each Fall and Spring semester until the thesis, dissertation, or project is complete. A student must be enrolled in the Summer semester if the thesis, dissertation, or project will be completed then.

The only exception to this policy is if the student's major professor is on leave or otherwise unavailable. In such cases the approval of the appropriate college director and the Dean of the Graduate School is required. In the case of serious personal or medical circumstances, students may request a leave of absence, subject to the approval of the program graduate coordinator, the college director of graduate studies, and the Dean of the Graduate School.

### Admission to Non-Degree Status

**Combination Senior:** An undergraduate senior student may earn up to 12 hours of graduate credit while enrolled on a Combination Senior/Graduate Non-Degree basis. The student must have a total cumulative GPA of at least 3.25 and must have filed with his or her Graduate School Academic Advisor a plan for completing the bachelor's degree within two semesters. Eligible students may enroll concurrently in undergraduate and select graduate courses. Approval to register for graduate credit does not imply approval for admission into a graduate program at the University or that the credit earned will be accepted towards a graduate degree. After the bachelor's degree is awarded, a Combination Senior/Graduate Non-Degree student must make formal application in order to be admitted to a graduate degree program. Courses taken for graduate credit may not be used for both the baccalaureate and graduate degree. Combination seniors are not eligible for graduate assistantships.

**Graduate Non-Degree:** This classification is for domestic students who wish to enroll in graduate courses but who do not wish to pursue a graduate degree at the University or whose applications are incomplete. Graduate non-degree applicants must show proof of having earned a baccalaureate degree at the time of application. At the end of the first semester of course work, the Graduate Non-Degree student may be required to furnish an official transcript showing at minimum a bachelor's degree from an accredited college or university.

Academic units may restrict non-degree students to designated courses. Graduate Non-Degree students who decide to matriculate for a degree must make application to the Graduate School and must meet all admissions requirements. Master's students in programs requiring 36 credit hours or fewer are limited to 12 credit hours while in non-degree status. Students in degree programs requiring more than 36 hours must take at least 2/3 of the credit hours after acceptance into the program. Students should note that some academic units count coursework toward a degree only after admission or have more restrictive policies regarding the number of non-degree hours that count toward the degree.

Before registering for a second semester of graduate level coursework, the non-degree student is required to sign a release agreeing that additional coursework will not apply to degree programs.

Non-degree students must maintain a 3.00 GPA in graduate courses in order to re-enroll and are not eligible for graduate assistantships.

## Miscellaneous Admissions Information

### Hepatitis Vaccination

The General Assembly of the State of Tennessee mandates that each public or private post-secondary institution in the state provide information concerning Hepatitis B infection to all students entering the institution for the first time. Those students who will be living on campus must also receive information about the risk of meningococcal meningitis infection.

After reading this information and prior to registering for classes, you must complete and sign the waiver form to indicate that you have received the information and have chosen to have the vaccination, plan to have the vaccination, or chosen not to have the vaccination. The waiver form is on-line at: <http://saweb.memphis.edu/health/>.

### Measles Vaccination

The University of Memphis requires all students born after January 1957 to have had the measles (MMR) vaccination after January 1, 1980, in order to register. The vaccination is available in the University Health Center for a nominal fee.

## Health Services

Limited medical services are available in the University Health Center upon presentation of a valid student identification card. Outpatient medical services, including general clinical evaluation, diagnosis, and treatment; laboratory and X-ray; family planning; and a dispensary are available. Students are charged only for lab tests sent off-campus to a reference lab, for medicines (over-the-counter or prescribed by the center) purchased at the dispensary, and for family planning.

## Veterans Services

**Mission:** The Office of Veterans Services, 003 Wilder Tower, provides assistance for eligible National Guard/Reserves, veterans, and/or dependents who enroll at the University of Memphis and who make application for programs of education or training, and

VA tutorial services. Other assistance includes: liaison with Veterans Administration Regional Office, counseling, and counseling referral for personal, family, career, financial, and educational problems.

**Application for VA benefits:** Those who will be using VA educational assistance while enrolled at the University of Memphis should contact the Office of Veterans Services. They should also be prepared to furnish the following items as applicable:

1. The number 4 original or copy of the DD214 or other armed forces separation papers.
2. Copy of Delayed Enlistment Contract.
3. Copies of marriage licenses and children's birth certificates.
4. Copy of final divorce decree if either veteran or spouse has been previously married.
5. VA file number if different from social security number.

**Advance Pay:** Advance payment is available for eligible veterans and dependents who plan to enroll on at least a half-time basis. Applications will be accepted in the Veterans Services Office as early as 120 days before the term begins but no later than 45 days before the beginning entry. Generally, the advance pay deadline for the fall semester is around July 15, while spring semester deadline is around November 15. Advance pay checks include an allowance for the month or fraction thereof in which the course begins and the allowance for the following month. Advance pay checks are mailed to the school for delivery to the student at registration. Initial applicants who do not apply for advance pay may expect their check to be mailed to their home within six to eight weeks after registration.

**Enrollment Status:** For VA benefits during the regular terms (Fall and Spring), 12 semester hours constitute a full-time load for undergraduate students; 9 hours is full-time for graduate students. However, training time for summer session at the undergraduate and graduate level is based on the number of semester hours attempted per term. The Veterans Administration places restrictions on those who receive veterans educational benefits. Some of these restrictions include: (1) regular class attendance, (2) satisfactory academic progress, and (3) adherence to a specific degree plan.

**Degree Plan:** Only courses that are required for the degree and major may be certified for VA pay. VA will not pay for repeat courses if the grade already earned is accepted by the U of M and will fulfill graduation requirements toward the declared degree and major (even if the course was taken at another institution with or without use of the GI Bill). VA will not pay for elective courses in excess of those needed to meet graduation requirements.

Although advisors are provided for veterans, this assistance does not relieve students of the responsibility for fulfilling all VA and University requirements.

**Certification:** Enrollment certifications are mailed and/or electronically submitted to the appropriate VA Regional Office upon receipt of the Veterans Request for Certification Form. Students are required to submit this form to the Veteran Services Office at the University of Memphis each semester. Students will be certified on a term-by-term basis. Pre-certification will be done only when a request for advance pay is made.

**Termination of Benefits:** VA benefits and Title IV funds for enrollment fees are subject to cancellation and immediate repayment if the recipient stops attending, whether or not he/she has withdrawn or dropped a course. The instructor will report the last known date of attendance as the student's "unofficial withdrawal date." Students who stop attending will be assigned a grade of "F" in courses that do not reflect an official withdrawal.

## ROTC Programs

Graduate students are eligible to earn a commission as a second lieutenant in the US Air Force by completing 12 semester hours of the AFROTC advanced program in conjunction with their graduate studies. Applications are accepted during January and February for Fall semester entries.

Graduate students are also eligible to earn a commission as a second lieutenant in the US Army by completing 16 semester hours of the ROTC advanced program in conjunction with their graduate studies.

### Residency Classification



All determinations concerning the classification of students as in-state or out-of-state for fee purposes are made in the Admissions Office. The determinations are based on regulations and guidelines of the state of Tennessee. If, for any reason, there is a question about a student's state residency classification for fee payment purposes, the student is responsible for requesting a review of their residency status before classes begin. Requests for review should be made to the Admissions Office.

## INTENT

The public institutions of higher education in the State of Tennessee shall apply uniform rules, as described in these regulations, for the purpose of making admission decisions and determining whether out-of-state tuition shall be charged to a student enrolling at the University of Memphis ("University"). These rules are promulgated in accordance with the principle that as a state, tax-supported institution, the University extends preference in admission and tuition to residents of the state of Tennessee.

## DEFINITIONS

1. **Continuous enrollment:** Continuously enrolled: Attendance at a school or schools in the state of Tennessee shall be deemed "continuous" if the person claiming continuous attendance has been enrolled at a public higher education institution in Tennessee as a part-time or full-time student. Such person need not enroll in summer sessions or other such inter-sessions beyond the normal academic year in order that his or her enrollment be deemed continuous, notwithstanding lapses in enrollment occasioned solely by the scheduling of the commencement and/or termination of the academic year.
2. **Domicile:** A physical presence in the state of Tennessee with simultaneous intent to make Tennessee one's permanent home and place of habitation and abandonment of any former domicile.
3. **Emancipated/independent student:** A student whose parents or legal guardian/custodian have entirely surrendered the right to the care, custody, and earnings of such person and who no longer are under any legal obligation to support or maintain such emancipated/independent person.
4. **Parents:** a person's father or mother. If there is a non-parental guardian or legal custodian of an un-emancipated person, then "parent" shall mean such guardian or legal custodian; provided, that there are not circumstances indicating that such guardianship or custodianship was created primarily for the purpose of conferring the status of an in-state student on such un-emancipated person.
5. **Performance based program:** Recognized University programs with entrance criteria based on clearly established academic standards or satisfactory program participation that must be maintained to continue participation in the program.
6. **U.S. Armed Forces:** the U.S. Army, Navy, Air Force, Marine Corps, and Coast Guard.

## RESIDENCY REQUIREMENTS FOR ADMISSION AND IN-STATE TUITION

A student will be considered a Tennessee resident for admission and in-state tuition purposes if the student is a citizen of the United States, has resided in Tennessee for one (1) year immediately prior to the beginning of the term being applied to, and meets one of the following conditions:

- Graduated from a Tennessee public secondary school;
- Graduated from a private secondary school that is located in Tennessee; or
- Earned a Tennessee high school equivalency diploma.

A student who is domiciled in the state of Tennessee will be considered a Tennessee resident for admission and in-state tuition purposes.

- A student can establish domicile by establishing that the student, or the student's parent(s) or legal guardian/custodian if the student is considered a dependent student, as a physical presence in the state with simultaneous intent to make Tennessee one's permanent home and place of habitation and abandonment of any former domicile.
- Presence in Tennessee primarily for educational purposes is insufficient to establish domicile.
- Undocumented aliens cannot establish domicile in Tennessee, regardless of length of residence in Tennessee.
- Decisions regarding domicile will be made by the University based on a review of all evidence presented and upon consideration of its reliability, authenticity, credibility and relevance.

## ADDITIONAL CATEGORIES OF INDIVIDUALS WHO ARE NOT REQUIRED TO PAY OUT-OF-STATE TUITION

1. An unemancipated/dependent, currently enrolled student whose parent(s) or legal guardian/custodian relinquish residence or domicile in the state of Tennessee shall not be required to pay out-of-state tuition at the University so long as he or she maintains continuous enrollment at a state of Tennessee public higher educational institution or institutions.
2. Students participating in an approved University performance-based program may not be required to pay out-of-state tuition. Such programs may include, but are not limited to: the Helen Hardin Honors College, ROTC, and the National Student Exchange program.
3. A person who otherwise meets admission requirements shall not be required to pay out-of-state tuition if they reside in a county of another state lying immediately adjacent to a county where the University is located or if they reside within thirty (30) miles of the University.
4. Unemancipated/dependent students of divorced parents shall not be required to pay out-of-state tuition when one (1) parent, regardless of custodial status, is domiciled in Tennessee.
5. A student who is a United States citizen or permanent resident and is the spouse of a current student classified as in-state for tuition purposes shall not be required to pay out-of-state tuition.
6. Academic Common Market: Students enrolled at the University of Memphis in an approved and designated Academic Common Market degree program or concentration shall not be required to pay out-of-state tuition.
7. An unemancipated/dependent person whose parent is not domiciled in Tennessee but is a member of the armed forces and stationed in Tennessee pursuant to military orders shall not be required to pay out-of-state tuition. Further, such a person who maintains continuous enrollment shall not be required to pay out-of-state tuition if his or her parent thereafter is transferred on military orders.
8. Part-time students who are not domiciled in Tennessee but who are employed by one (1) or more employers in the State and such employment is equivalent to full-time employment shall not be required to pay out-of-state tuition.
9. U.S. Armed Forces personnel, their spouses, and dependents, stationed in the State of Tennessee, shall not be required to pay out-of-state tuition. This provision shall not apply to military personnel and their spouses who are stationed in Tennessee primarily for educational purposes.
10. Active-duty military personnel who begin working on a college degree at the University while stationed in Tennessee and who are transferred or deployed prior to completing their degrees, can continue completion of the degree(s) at the University without being required to pay out-of-state tuition, as long as he/she completes at least one (1) course for credit each twelve (12) month period after the transfer or deployment. Exceptions may be made in cases where the service member is deployed to an area of armed conflict for periods exceeding twelve (12) months.
11. Qualified, dependent children entitled to scholarship or exemption from out-of-state tuition by statute, including but not limited to, T.C.A. § 49-4-704 and T.C.A. § 49-7-164, shall not be required to pay out-of-state tuition.
12. Veterans or other individuals eligible to receive educational benefits administered by the United States Department of Veterans' Affairs, shall not be required to pay out-of-state tuition or any out-of-state fee, if the veteran or individual is:
  - Enrolled in any public institution of higher education in Tennessee;
  - Utilizing such benefits at the enrolling institution; and
  - Living in the state of Tennessee, regardless of the individual's formal state of residency.

#### **APPEAL**

Initial residency classification will be determined by the Office of Undergraduate Admissions and Orientation for undergraduate students and the Graduate Admissions Office for graduate students. Students may appeal their initial residency reclassification by submitting a written request for reclassification with supporting documentation on forms prescribed by the University. Appeals for the current term must be made to the Residency Appeals Committee on or before the last day to add or change sections for the current full term. Appeals received after this date may only change a student's residency for future terms. Individuals disagreeing with the decision of the Residency Appeals Committee may appeal that decision in accordance with applicable laws and regulations.

#### **RECLASSIFICATION**

If a student classified as out-of-state or international applies for in-state tuition and is subsequently reclassified, his or her in-state classification shall be based on the date the appeal form was received by the appeal committee. However, out-of-state tuition will be charged for any quarter or semester during which reclassification is sought and obtained unless application for reclassification is made in accordance with University policy.

# Academic Regulations

Graduate and prospective graduate students are responsible for being thoroughly familiar with the rules, regulations, and degree requirements of the Graduate School and of the academic departments, as well as with the Code of Student Conduct. Catalog applies to where the courses originate, not where the students originate.

The Fogelman College of Business and Economics, the College of Education, and the Herff College of Engineering have additional college degree requirements. The Cecil Humphreys Law School has a separate catalog that applies only to law school students. Please see Degree Programs (All Programs) for individual program requirements.

## Course Numbering System

Only non-degree and fully admitted graduate students may enroll in and receive graduate credit for courses numbered according to the following system:

**6000-6999:** Courses equivalent to 4000 level senior courses for which a limited amount of graduate credit may be earned. Students will be expected to do more work, such as an additional paper or additional higher level readings, to receive graduate credit.

- Students may not receive credit for a 6000 level course if they have credit at the 4000 level.
- 6000 level courses must be taught by members of the Graduate Faculty.
- No more than 15 post-baccalaureate hours of 6000 level courses may be applied to a doctoral degree.

**7000-7999:** Courses open primarily to master's students and taught by members of the Graduate Faculty

**8000-8999:** Courses open primarily to post-master's students and taught by members of the Graduate Faculty

**9000:** Dissertation, directed by a full member of the Graduate Faculty

## Graduate Maximum Course Load and Time Status

The unit of credit at the University of Memphis is the semester hour. A semester hour is defined as the credit earned for the successful completion of one hour per week in class for one semester; or two to three hours per week of laboratory for one semester. (A course which gives three semester hours credit will normally meet for three lecture or recitation hours per week, or for two lecture or recitation hours and two-three laboratory hours per week; or for some other combination of these.) Each lecture hour presupposes a minimum of two hours preparation on the part of the student.

## Graduate Course Load Limitations

Fifteen semester hours of coursework is the maximum load for students devoting full time to graduate study during regular sessions. The maximum total number of hours of graduate course work for which a graduate student may enroll during the Summer Session is 9.

## Graduate Students and Time Status Definitions by Term

Graduate students who register for 9 or more hours for Spring and Fall in the academic year will be considered full-time students. Graduate students who register for 6 hours or more in the Summer will be considered full time. For financial aid and state

reporting, full time status is 9 hours for Fall, Spring, and Summer for Graduate students. The table below shows the hour requirements for full time status by term and definition. See table below for more information on time status and usage.

	Financial Aid and State reporting - Full time Definition	University Definition of Full Time (Time status in Banner)
<b>Fall</b>		
Masters Graduate Certificates Pre-Comps	9	9
<b>Spring</b>		
Masters Graduate Certificates Pre-Comps	9	9
<b>Summer</b>		
Masters Graduate Certificates Pre-Comps	9	6

## Late-Stage Doctoral Students and Time Status

Late-Stage doctoral students are students who have completed and passed their comprehensive exams. These students may enroll in only one dissertation hour and be considered full-time if they are working full time on their dissertations.

Late-Stage students who are enrolled in less than 9 dissertation hours during a fall or a spring semester are still expected to be working at least half-time on their dissertation to qualify for full-time status and meet federal financial aid guidelines. If you do not plan to work at least half-time on your dissertation, you must notify the graduate school.

## Audit Courses

Students who are admitted to the University of Memphis may register to audit a course with the prior approval of the instructor and the head of the academic unit or designate. Students enrolling on an audit basis do not receive academic credit for that course. Particularly in high-demand courses, academic units should make sure that students who need these courses for degree credit can be accommodated before they issue permits for audits. Audits should not be used simply as a vehicle for obtaining access to laboratory or studio facilities.

Auditors are not required to take examinations and do not receive a regular letter grade. The student and the instructor should reach a precise agreement as to the extent and nature of the students participation in the course, including class discussion, projects, and readings. Students auditing a course will receive "audit" (AU) on the transcript only if they have attended regularly and participated according to the prior agreement with the instructor.

**A student may not change from a grade point basis to audit or from audit to a grade point basis after the last day to add classes for that session.** Any questions concerning this policy should be referred to the colleges.

Fees for audits will be assessed on the same basis as fees for credit courses.

## Attendance Policy

Requirements for attendance in any graduate course will be determined by the instructor and will be communicated in writing to students in the first class meeting.

## Withdrawing from Classes After the Add/Drop Deadline

Courses may be added or dropped after initial registration for a limited time only. Refer to the Registrar's Student Calendar for appropriate deadlines. Courses may be added late only upon approval of the instructor and the director of graduate studies in the student's college. Students in the School of Communication Sciences and Disorders or College of Professional and Liberal Studies must obtain the approval of the director of graduate studies in those units.

Students may withdraw from courses after the drop date only when circumstances beyond the student's control make it impossible to complete the semester. Two examples of such circumstances would be: extended personal illness or job relocation, both of which are identified as legitimate grounds for action. Also, late and retroactive drops or withdrawals will be processed for students for which a clerical error has been made (e.g., wrong section number) and for students who change from a thesis to a non-thesis master's degree program (thesis courses 7996 or 7999). These cases must be verified by the departmental graduate coordinator. Late drops or withdrawals will not be approved in a situation in which a student might simply wish to avoid receiving an unsatisfactory grade.

Late drops must be approved by the director of graduate studies in the student's college. A benefits and Title IV funds for enrollment fees are subject to cancellation and immediate repayment if the recipient stops attending, whether or not the student has dropped a course.

## Withdrawal from the University During a Semester

A graduate student may withdraw (drop all courses from which they enrolled during a specific semester) from the University after the specified drop date must seek approval from their program coordinator. Late withdrawals must be approved by the Director of Graduate Studies in the student's college and submitted to the Graduate School. Failure to officially withdraw will result in grades of "F" for the courses in which the student is enrolled.

Students enrolled on a non-degree basis must obtain the approval of the Dean of the Graduate School or approved designee. VA benefits and Title IV funds for enrollment fees are subject to cancellation and immediate repayment if the recipient stops attending, whether or not the student has withdrawn.

## Leave of Absence

Continuous enrollment is expected of all late stage (those working on dissertations, theses, or final projects) graduate students; however, in rare circumstances a student may need to petition for a leave of absence within the final stage (dissertation, thesis, final project) of their degree program when, due to hardships beyond their control, they cannot be continuously enrolled. Such

circumstances can be related to military duty, medical or sudden job relocation. A petition form, with instructions, can be found here. Appropriate documentation must be provided by the student and approved by all signatories.

## Grading System

The table below shows the grades that may be awarded with their quality points:

### Plus/Minus Grading Scale

GRADE	QUALITY POINTS	GRADE	QUALITY POINTS
A+	4.00	C+	2.33
A	4.00	C	2.00
A-	3.84	C-	1.67
B+	3.33	D+	1.33
B	3.00	D	1.00
B-	2.67	F	0.00

Grades used to postpone or suspend course completion include "I" (incomplete), "IP" (in progress), and "W" (withdrawn).

Independent studies or problems courses, directed readings, student teaching, workshops, practica, internships, theses, and dissertations should be graded "A-F, IP" or "S","U", IP." A grade of "S","U," or "IP," does not carry any quality points and is not included in computing GPA.

**Incomplete:** The grade "I" (Incomplete) may be assigned by the faculty member in any course other than those with "IP" grading in which the student is unable to complete the work due to extraordinary events beyond the individual's control that are acceptable to the faculty member. The "I" may not be used to extend the term for students who complete the course with an unsatisfactory grade. Unless the student completes the requirements for removal of the "I" within the next major term (see chart below) from the end of the semester in which it was received (see the University Calendar), the "I" will change to an "F," whether or not the student is enrolled.

Faculty and students with incompletes should always develop a completion plan, which may involve less time than allowed by policy. The amount of time allowed by the faculty member should be realistic and based on the proportion of coursework that is incomplete (as well as being informed by the student circumstance that resulted in the 'I' grade). If the student does not execute on the plan developed with the faculty member, then the grade change can be issued by the faculty from 'I' to whatever grade is appropriate at any time prior to the deadline.

The faculty member may grant an extension if sufficient extenuating circumstances exist. At the end of the extension period, the "I" grade will automatically revert to "F" if the student has not completed the requirements. The student will be certified for graduation only when all requirements are met, including the removal of "I" grades. If a student has an "I" in a course necessary to fulfill degree requirements in the semester in which he or she expects to graduate, the certification process and graduation will automatically be deferred to the next term.

<b>Major Terms:</b> Student earns an I in Spring	Students have until the last day of the Fall term to complete coursework (Summer is not a major term.)
Student earns an I in Summer	Students have until the last day of the Fall term to complete coursework
Student earns an I in Fall	Students have until the last day of the Spring term to complete coursework

**In Progress:** In some courses with "IP" (In Progress) grading, faculty members may assign "IP" to extend the time permitted for the completion of research or course requirements. A student awarded an "IP" grade must re-enroll in the course for the *same* number of hours to complete the work. Students must continuously re-enroll in thesis or dissertation courses but the hours may vary. The final grade will be submitted by the faculty member at the end of the term in which the work is completed.

**Thesis/Dissertation Grading:** The use of S, U, IP grading for theses and dissertations is different from its use for other courses. The grade of "S" is ONLY awarded when the student successfully defends the thesis or dissertation; the grade of "U" is awarded ONLY when the student fails to defend successfully. Otherwise, the grade of "IP" is awarded to indicate that the student is progressing in a timely manner. Students must enroll for at least 1 thesis or dissertation hour for each semester (except for summer sessions) that they are working on the thesis or dissertation.

**Grade Point Average:** Graduate students must maintain a minimum of a 3.0 GPA ("B"). Grades of "D" and "F" will not apply toward any graduate degree, but will be computed in the GPA. No more than 7 hours of "C-," "C" or "C+" will be applied towards meeting degree requirements. Grades earned at another university will not be computed in the cumulative GPA. Grades in courses that are older than the time limitation set for completion of a given degree will be shown on the transcript. With permission of the academic department, however, these grades will not be included in the computation of the GPA used for graduation. Only courses that have been validated will count toward the degree (see below for validation policy). The overall GPA required for graduation, computed on all graduate level courses completed whether or not they are listed on the candidacy form, must also be a minimum of 3.0.

**Repetition of Courses:** A graduate student may repeat a course to earn a higher grade only if the earned grade was a "U" or lower than a "B" (3.0). **No course may be repeated more than once to improve the grade.** Only the grade earned in the second attempt will be included in the computation of the cumulative grade point average using the grade change workflow process. A maximum of two courses may be repeated during the student's total graduate career to improve a grade. However, if a student advances to a doctoral program and wishes to repeat a third course at the doctoral level, the student must seek approval from the director of graduate studies. Students should always check with their advisors before enrolling in a course a second time. After completion of the repeated course(s), students must go to their director of graduate studies or designee to get approval for grade replacement.

**Grade Changes:** Grades properly issued in a course by the faculty member of record will not be altered except when an error was made in computation or reporting or as a result of a formal grade appeal. A grade other than "I" or "IP" may not be changed as a result of additional work after a grade has been submitted to the Office of the Registrar.

## Expired Course Grade Removal

- The request for expired course grade removal form is a plan of academic forgiveness which allows graduate students who previously experienced academic difficulty to improve their academic record upon returning to college after an extended absence. The process allows eligible students to resume study without being penalized for past unsatisfactory scholarship.

- **Courses eligible** for the expired course removal process must be at least eight (8) consecutive calendar years old as a master's degree student or at least ten (10) years old as a doctoral student. Any number of expired course grades are eligible for this program.
- In consultation with their advisor, students will need to complete a Course Grade Removal from Cumulative GPA form, obtaining all required signatures.

### Student Requirements

To be considered eligible a student must:

- Be admitted as a **degree-seeking** student at the University of Memphis.
- **Submit a** completed Course Grade Removal from Cumulative GPA form, containing all signatures noted on the form, to the Graduate School.
- Students applying for expired course grade removal are not required to provide additional supporting documentation.

### Terms

- The student may be granted Expired Course Grade Removal **only once** during their graduate academic career.
- Courses Grades Removed will remain on the student's academic record although they will not be included in the calculation of the graduate student's GPA. These courses will appear with an "X" in front of the grade on the transcript. Once a course grade is removed, this is not reversible.
- This is independent of financial aid and scholarship regulations and requirements. The student should consult with other offices at the University of Memphis for proper guidance regarding federal, state, and institutional financial aid programs; collection of student fees and charges; payment plan options; scholarship eligibility; and/or educational benefits.

Students using this policy should understand that the original grades remain on the transcript but no longer count in the GPA.

## Change of Major Grade Removal

This is a plan of academic forgiveness that allows graduate students with previous academic difficulty to improve their academic record when they change programs of study (majors or concentrations). This allows students to exclude a limited number of graduate courses in which they received a C or lower at the University of Memphis from their GPA calculation. It is intended to forgive grades of C or lower that do not apply to the new major.

### Student Requirements

To be considered eligible, a student must:

1. Be admitted as a degree-seeking student at the University of Memphis within their newly chosen major.
2. Have an overall graduate level GPA of less than 3.0 (on academic probation) at the time of application for change of major grade removal.
3. In consultation with their new academic advisor, submit an Academic Program Update Form specifying the old and new programs of study (major/concentration), first. The Course Grade Removal from Cumulative GPA form must be submitted next, no later than the end of the semester in which the student matriculates into the new program.
4. Not have earned a graduate degree previously or have been granted a previous change of major grade removal.
5. The student may apply to exclude 1/3 of the program coursework from the previous degree with grades of C or less from their GPA calculation (an "X" will appear in front of the excluded grades on the transcript). These courses must be required courses in the previous program of study (old major/concentration) and cannot be required for the new program of study (major/concentration). The fully completed Course Grade Removal from Cumulative GPA form should be submitted to the Graduate School for review. Graduate School staff will keep advisors from both programs informed of the status of the application and consult with them as needed.



If the application is approved by Graduate School, to be granted change of major grade removal, a student must:

1. Complete a minimum of 6 hours with a minimum GPA of 3.0 in courses that represent progress toward the new declared major/concentration. These courses must be completed within one academic semester of the application.
2. Receive departmental approval and Graduate School approval in order to continue coursework in the new program while remaining on academic probation.

### Terms

1. This is not a substitute for repeating courses to replace grades and should only be used as a final option. The student may be granted change of major grade removal only once during their graduate career.
2. Once a student has successfully fulfilled conditions for change of major grade removal, the GPA will then be re-calculated excluding the courses named in the application. Reminder: maximum of 1/3 of the old program of study (major/concentration) with grades of C or lower may be excluded; the courses may come from any semester or combination of semesters; most importantly, all courses excluded must be required courses in the previous program of study (old major/concentration) and cannot be required for the new program of study (major/concentration). These courses will appear with an "X" in front of the grade on the transcript.
3. Courses chosen under this policy will not count toward course repeat policy
4. This is independent of financial aid and scholarship regulations and requirements. The student should consult with the Office of Financial Aid, University & Student Business Services, Scholarship Office, and/or Veterans Educational Benefits & Certification in the Office of Registrar at the University of Memphis for proper guidance regarding federal, state, and institutional financial aid programs; collection of student fees and charges; payment plan options; scholarship eligibility; and/or educational benefits.
5. Students using this policy should understand that because the original grades remain on the transcript, they may be considered by other institutions when applying to graduate or professional school and by employers.

## Credit by Exam

In cases where a student has current knowledge but has not earned credit for an appropriate course, an academic department may offer a student graduate credit by examination, subject to the following regulations. The Credit by Exam form can be opened through this link.

The following regulations govern the granting of credit by examination:

- Students must be currently enrolled in a degree program (full-time or part-time) and must be in good academic standing.
- Only courses with "fixed content" areas are eligible for credit by examination. (Independent study, individual directed research, special topics, workshops and individual project classes are not eligible).
- Total credit-by-examination applied to a student's degree program may not exceed nine (9) semester hours.

The student must follow these steps to obtain credit by examination:

- Complete the electronic form noted above, which will trigger approval requests to respective academic department administration. Once approval is obtained, an exam payment portal will be created for the student to complete payment. Afterward, the student will be contacted by the academic department to schedule taking the exam.
- When the exam is successfully taken as indicated by the student's academic department chair, the Dean of the Graduate School (or designee) will authorize the posting of the credit to the student's record.

- The form of the examination, the method of administering it, and the time of examination are left to the discretion of colleges and academic units.
- Instructions and explanations are embedded throughout the Credit by Exam system to guide student and academic department interaction within the Credit by Exam system.
- To receive credit, the student's examination grade should be equivalent to at least a "B" (3.0). Credit is indicated on the student's record as "S" but is not figured in the GPA.

The only remedy to an unsuccessful credit-by-examination grade is to enroll in and complete the course.

### **Time Limitations and Course Validation**

The University sets time limits on students to ensure that students have reasonably current knowledge in those courses that comprise the graduate program in which they are enrolled and for which a graduate degree is awarded. It also wants to ensure that students finish their chosen degree in a timely manner. For a master's degree all coursework needs to be completed within eight years. For a doctoral degree (and master's degrees that require more than 36 hrs) all coursework needs to be completed within 10 years. When coursework taken is too old to be included in the graduate degree program, the academic unit in which the course was taken may allow the student to validate that coursework, subject to the following regulations:

- Only students fully admitted to graduate programs and who are in good standing are eligible.
- Only courses with fixed content are eligible for validation. (Independent study, research, special topics courses, and workshops are ineligible.)

The method of validation is left up to the department in which the course was offered and in which the student seeks a degree, but there are a variety of possible validation methods including:

1. Passing an examination specifically on the material or requisite subset of the material covered by a given course.
2. Passing a more advanced course in the same subject area that clearly utilizes and builds upon the work of the lower-level course.
3. Passing a comprehensive examination in which the student demonstrates knowledge of the content of a course.
4. Successfully defending a dissertation proposal in which the student demonstrates knowledge of the content of the course.
5. Successfully defending a dissertation in which the student demonstrates knowledge of the content of the course.
6. Teaching the given course or one that is closely and documentably comparable.
7. Publishing scholarly research demonstrating substantial knowledge of the course content.
8. Completion of an independent study or project(s) which demonstrates knowledge of the content of the course.
9. Professional development activities and/or professional experiences that are documented by evidence such as samples of work-related projects relevant to course content with an explanation for how they are applied "on the job".

The department also has the option of submitting a form to the graduate school to waive validation.

Validation or waiver of validation must be reported to the graduate school using the appropriate form. See forms on the Graduate School website page.

In circumstances where a student has expired coursework that occurred while pursuing one degree and is interested in using that coursework to finish a different University of Memphis degree the following validation process can be used:

1. The student needs to document and explain how the University of Memphis expired coursework is relevant to the new degree program and get approval from the new degree program prior to the start of coursework to use those courses toward the new degree.
2. The University of Memphis department in which the expired courses were taken reviews the student's proposed use of expired coursework and either validates the course or certifies that there is no need to validate the courses. (see form above)

Once the course(s) is validated the student must complete the new degree within the limits set above.

# Maximum Combined Credit Hours to Fulfill Degree Requirements

For graduate students, the maximum amount of combined hours of transfer credit, credit by examination, course validation and experiential learning credit used to fulfill degree requirements is two-thirds the number of hours required for the degree.

A maximum of 15 credits may be transferred from certificate programs to non-related graduate degrees, subject to approval of the graduate program as well as the graduate school. Moreover, all credits from a certificate program may be transferred to a relevant graduate degree where the entire content of a given certificate could satisfy some of the requirements of a graduate degree. Students should consult the degree program department in advance to determine which of the certificate program credits are appropriate for transfer.

The Graduate School sets minimum standards to which all the diverse graduate programs across the university must adhere. Individual colleges, schools, and graduate programs are encouraged to set more stringent requirements as necessary to meet their accreditation and student needs.

For additional information about credit by examination procedures, contact the Graduate School Graduation Analyst or the Graduate School Office at 901.678.4212.

## Shared Credits

This section pertains to credits shared between two UofM graduate programs. For credits transferred to a UofM degree program from another institution and recorded on the UofM transcript, please see the Transfer Credit section.

### Graduate Certificate Programs

A maximum of 15 credits may be shared between a certificate program and a non-related graduate degree program, subject to approval of the graduate degree program as well as the Graduate School. Moreover, all credits from a certificate program may be shared with a relevant graduate degree program where the entire content of the certificate program can satisfy some of the requirements of the graduate degree program. Students should consult the degree program department in advance to determine which of the certificate program credits are appropriate for sharing.

### Second (Combination) Master's Degree

Students who have previously earned a master's degree from The University of Memphis or are currently enrolled in one may share some courses while pursuing a second master's with a different concentration, major, and/or degree. The second academic unit will determine whether any credit from the first degree will be accepted toward the second degree. The two programs may be pursued simultaneously or sequentially and must be completed within the appropriate time limit, starting with initial matriculation in the first program of study. Accordingly, course expirations and potential course validations should be considered.

To undertake a combination master's program, admission must be obtained to both programs. An approved formal plan of study, including shared credit hours, must be developed upon admission and copies kept by all participating parties. (Consecutive programs do not require approval of shared courses by those overseeing the first program.) If approved, up to 20% of the total combined credit hours for the two programs or 15 credit hours (whichever is greater) may be shared. Students must pass separate comprehensive examinations.

### Second (Combination) Doctoral Degree

Students who have previously earned a doctorate from The University of Memphis or are currently enrolled in one may share some courses while pursuing a second doctoral degree. The second academic unit will determine whether any credits from the first degree will be accepted toward the second degree. The two programs may be pursued simultaneously or sequentially and must be completed within the appropriate time limit, starting with initial matriculation in the first program of study. Accordingly, course expirations and potential course validations should be considered.

To undertake combination doctoral degrees, admission must first be obtained to both programs. An approved formal plan of study, including shared credit hours, must be developed upon admission and copies kept by all participating parties. (Consecutive programs do not require approval of shared courses by those overseeing the first program.) No more than 12 semester hours from one doctoral degree may be applied toward the other degree. Students must pass separate comprehensive examinations and successfully defend separate dissertations.

## Transfer Credit

This section pertains to credits transferred to a UofM degree program from another institution and recorded on the UofM transcript. For credits shared between two UofM degree programs, please see the Shared Credits section.

Credit towards a graduate degree or certificate does not transfer automatically. Graduate work completed at another institution can be accepted in a graduate program at the University if the work (1) is relevant to the graduate program at the University; (2) does not exceed the time limitations set for the graduate program; and (3) is approved by the student's Advisory Committee and the Graduate Program Director or Department Head. Courses proposed for transfer credit must have a minimum of 750 contact minutes for each semester credit. Thesis and Dissertation credits cannot be transferred.

Credit previously earned at another institution must be presented for evaluation before the student submits their candidacy form. Forms are available on-line or from the Provost's Office. Only transcripts received directly from an issuing institution are considered official. Grades earned at another institution will not be computed in the University cumulative grade point average, nor will they be accepted for transfer unless they are "B" (3.00) or better.

## Credits Transferred from an uncompleted degree

Transfer credit may be accepted from an uncompleted graduate degree or graduate certificate program for up to one-half the number of semester hours required for a master's, post-master's, or doctoral program at UofM. Up to six semester hours of transfer credit can be accepted toward a graduate certificate program at UofM. Students enrolled in a post-master's program who have credit hours beyond the master's degree from another institution may transfer up to one-half the number of semester hours required for the post-master's program at UofM. Individual academic units may set more stringent limitations. Note, too, that doctoral students are required to complete their last 30 credit hours in residence at UofM; this may impact the number of hours that can be transferred.

## Credits Transferred from a completed degree

Up to 15 semester hours of coursework may be transferred from a completed graduate degree or graduate certificate to a master's, post-master's, or doctoral program at UofM. For post-master's programs of study, credits from a completed master's degree are not considered to be transfer credits as they do not appear on the student's transcripts. For these post-master's programs of study, up to 15 semester hours of coursework beyond the master's degree may be transferred toward the degree. Individual academic units may set more stringent limitations. Note, too, that doctoral students are required to complete their last 30 credit hours in residence at UofM; this may impact the number of hours that can be transferred.

## Academic Performance Termination and Appeals

Students may be terminated from a graduate program based on: 1. academic or professional performance where termination from a graduate program does not terminate a student from the University and, therefore, students may be eligible to apply for alternative graduate programs; or 2. academic misconduct where students may be suspended or expelled from the University by virtue of an action of the Office of Student Accountability for conduct violations of the Student Code of Rights and Responsibilities. In such situations, suspension or expulsion from the University will result in automatic termination from the graduate program with no separate right of appeal. Please see the Office of Student Accountability website for more details.

## Academic Performance Termination Procedures

Graduate Students may be terminated from a program for academic performance concerns such as a second comprehensive examination failure, unsuccessful defense of thesis or dissertation, grades below standard, or a second consecutive semester on academic probation. Students may also be terminated from a program by an action of a program retention committee or other program committee authorized to take action based on a student's failure to meet the program's published retention standards. All actions should be taken to assist the student to improve their performance before termination procedures are initiated. In the spirit of helping improve performance, the Advisor should inform the student of concerns about the student's performance prior to initiation of the internal review process.

If after following the internal process to improve performance and the college/school is progressing toward termination, the following procedures should be followed for notifying students of termination:

1. An internal group/panel should be assembled within a program to review the recommendation for termination. The internal group/panel may include, but is not limited to, the following members: the Advisor, Graduate Coordinator, Department Chair, and/or an existing Program Retention Committee who will review the recommendation for termination. The exact composition of the internal group/panel is to be decided by each program.
2. Programs/Colleges/Schools need to document the process using the Termination Form and retain supporting documentation that clearly demonstrates the need to terminate.
3. If approved by the internal group/panel in #1 above, the Associate Dean / Director for Graduate Studies for the student's College or School sends the completed Termination Form and supporting documentation to the Associate Dean of the Graduate School regarding the impending recommendation for termination.
4. For procedural guidance, the Associate Dean of the Graduate School or designee reviews the recommended request for termination (The Termination Form) and provides procedural and policy-related feedback as warranted.
5. The Dean of the School/College reviews and renders a final decision on the termination. If the decision is to terminate, the Dean of the School/College sends a letter of termination to the student and copies the Advisor, the Graduate Coordinator, Department Chair, Associate Dean / Director for Graduate Studies, Dean of the Graduate School, and any other relevant party.
6. If a student is dismissed from a graduate program, he or she may be considered for a non-degree graduate program or they may apply to a different graduate program. (If the student cannot maintain a 3.0 cumulative GPA the student is not eligible for non-degree.

## Graduate Appeals Committee for Grade and Academic Performance Retention Appeals

Any graduate student has the right to appeal grade and retention decisions made by the academic department, program, or college/school in the implementation of University policy.

### NOTES:

1. "Business days" excludes Saturday, Sunday, and administrative holidays.

2. The summer sessions are considered as one term for appeal purposes.
3. The Graduate Appeals Committee shall be composed of a chair (who is non-voting), seven members, and three alternates constituted as follows:

The chair is designated by the Dean of the Graduate School who is non-voting and selected from the graduate faculty; two committee member and one alternate are selected from the graduate faculty by the Dean of the Graduate School; two committee members and two alternates are selected from the graduate faculty by the University Council for Graduate Studies; three student members and one alternate are selected by the Dean of the Graduate School.

Requirements of being on graduate appeals committee:

1. Must be available during the Summer semester.
2. Those who are connected to the student's department must recuse themselves from participating in the appeals process.

## Grade Appeals

This appeal procedure provides any graduate student at The University of Memphis with a clearly defined avenue for appealing the assignment of a course grade that the student believes was based on arbitrary or other reasons not related to academic performance. All cases alleged to be based on prejudice or discrimination will be referred to Office of Institutional Equity. In all cases, the student shall have the burden of proof with respect to the allegations in the appeal and in the request for a hearing.

The student must initiate the appeal process within 20 class days after the start of the following semester. If the instructor, chair, and dean or designee (individual or committee) fail to respond to the student's appeal within the time limits, the Graduate Appeals Committee shall act on the student's appeal. The procedure is terminated if the student and the instructor agree on the grade. If neither the student nor the instructor appeals a decision within the appropriate time limit, the disposition of the appeal made in the previous step shall be final.

A written record of all decisions shall be kept with the file at all steps in the process. Copies of all correspondence and records shall be retained in the office in which the appeal is finally resolved. The original documents shall be forwarded to the Graduate School for filing.

All parties must carefully adhere to the following procedure, observing the deadlines.

### Step 1

**Time Limitation:** Early enough to meet the deadline in Step 2.

The student shall first consult with the instructor in an effort to provide a satisfactory resolution of the appeal. If for any reason the faculty is unresponsive or unavailable, proceed to Step 2. If agreement is reached between the student and faculty, the appeal process ends.

### Step 2

**Time Limitation:** Twenty class days into the following semester.

If the appeal is not resolved in Step 1, the student must complete a Graduate Appeal Form (available in PDF format on the Graduate School's Resources page or in the Graduate School). This form, accompanied by a written statement detailing the factual basis of the faculty's written rebuttal gathered by the chair or equivalent, shall be taken by the student to the chair of the department in which the course was taken. The written appeal must be received by the chair within 20 class days from the start of the following semester. The department chair shall then address the appeal in consultation with the faculty and the student within 20 class days of the date of submission of the written appeal. If the faculty is unavailable, the chair should proceed with the appeal. The chair must provide a written rationale for any decision made, which shall become part of the file.

If the department chair was the faculty of the course involved in the appeal, or if for any reason the chair disqualifies themselves, the student may proceed to Step 3.

The chair is empowered to change the grade if they find that the original grade was based arbitrary or other reason not related to academic performance. The chair shall notify both the student and the faculty in writing of the action taken. Either the student or the faculty may request a copy of the full file in order to appeal the chair's decision within five (5) class days of decision notification by filing a written request for a hearing before the dean of the college (or their designee).

## Step 3

**Time limitation:** Within five (5) class days after Step 2.

If the appeal cannot be resolved at the level of Step 2 within the prescribed 20 class days, the student or the faculty has five (5) class days of decision notification to request in writing (with a copy to the Graduate School) that the chair forward the appeal to the dean of the college (or their designee). The chair shall provide the dean or designee with the Graduate Appeal Form, the chair's written rationale, a copy of all correspondence and decisions, along with other records pertaining to the appeal.

The dean or designee should resolve the grade appeal within 20 class days. If the dean or designee finds that the request lacks merit, they shall notify the student, the faculty, and the chair in writing; the grade shall remain as recorded. The dean is empowered to change the grade if they find that the original grade was based arbitrary or other reason not related to academic performance. The dean must provide a written rationale for any decision made, which shall become part of the file.

Either the student or the faculty may appeal the dean's decision within five (5) class days of decision notification by filing a written request for a hearing before the Graduate Appeals Committee with the Dean of the Graduate School or designee. This request must be accompanied by the Graduate Grade Appeal Form, a copy of all correspondence, including the dean's written decision, and other records pertaining to the appeal.

## Step 4

**Time limitation:** Within five (5) class days after Step 3.

The written request for a hearing before the Graduate Appeals Committee should state the factual basis for the appeal of the results of Step 3. All supporting documents, including the Graduate Grade Appeal Form, should be included at the time of submission.

The Dean of the Graduate School (or their designee) shall forward the request to the chair of the Graduate Appeals Committee. The chair shall subsequently distribute copies of the request to the members of the committee for consideration. If the Committee finds the student's or the faculty's request merits a hearing, the Committee shall notify the student, the faculty, the chair, and the college dean of the date, time, and the location of the hearing. If the Committee finds that the request does not merit a hearing, the student, the faculty, the chair, and the dean shall be so notified in writing. The hearing may be attended remotely using available technology.

The Graduate Appeals Committee should resolve the appeal within twenty (20) class days. To hold a hearing, the seven (7) members of the Committee (or appropriate alternates) must be present. The faculty and student will present their cases at the hearing in each other's presence. If a majority of the Committee agrees that the grade should be changed because it was based arbitrary or other reason not related to academic performance, the Committee shall notify the Dean of the Graduate School, who shall be empowered to change the grade without the consent of the faculty, the chair, or the college dean. Otherwise, the grade shall remain as recorded. The decision of the Committee shall be communicated to all parties in writing. The decision of the Graduate Appeals Committee shall be final.

The appeals procedure is not complete until all appropriate records are forwarded to the Graduate School Office. At this time, the Dean of the Graduate School shall notify the Office of the Registrar, Corrections, of any grade change. A copy of the Graduate

Appeals Form shall become a part of the student's file. A permanent record of all grade appeals reviewed by the Appeals Committee shall be maintained in the Graduate School.

## Academic Performance Retention Appeals

Any action related to the retention standards of the program for which the student is terminated from their graduate program may be appealed by the student pursuant to this policy. Reasons for appealing include: (a) New information, not available at the time of termination recommendation, has become available which would substantially alter the outcome of the termination decision, (b) The academic department or college/school failed to conduct the termination process fairly or violated its procedures in such a way as to disadvantage the terminated student, (c) The decision of the academic department or college/ school is arbitrary in relation to academic and professional performance requirements of the student's academic program. Appeals and time limits below are to be followed, and hearings on appeals convened only during periods in which the academic units of the University are in session.

### Step 1

**A. Time Limitation:** Five (5) business days following the date the termination notice was received.

The student may file a written appeal with the Dean's office of the College/School in which the student is enrolled using the Retention Appeal Form provided by the Graduate School. In the written appeal statement, the student must clearly state the reasons why the decision is being appealed, the facts and circumstances supporting the appeal reason, and the remedy or remedies requested. This appeal statement will become the only basis for all further consideration of the appeal. See guidance on how students should document their appeal in the Retention Appeals Form.

**B. Time Limitation:** Ten (10) business days following receipt of the appeal.

In considering the appeal, the Dean or Dean's designee of the College/School may meet with the graduate program director, the student's advisor, the Associate Dean / Director of Graduate Studies, and the student, as necessary. The Dean or Dean's designee of the College/School will notify the student in writing of the Dean's or Dean's designee's decision and reasons supporting the decision. If the Dean or Dean's designee upholds the termination decision, the decision will become final unless the student appeals under the Step 2 provisions within the prescribed timeframe.

### Step 2

**A. Time Limitation:** Five (5) business days following Step 1.

The student may appeal the Dean's or Dean's designee decision by filing, with the Associate Dean of the Graduate School or designee, a request for a hearing before the University Graduate Appeals Committee. The written request for a hearing must state the reason why the student believes the Dean's decision was in error and provide a copy of all documents submitted to the Dean in Step 1. Upon receipt of a Step 2 appeal, the Associate Dean of the Graduate School or designee will notify the graduate program and request a response to the appeal, including copies of correspondence and any other supporting documentation that led to the dismissal, to be provided within five (5) days.

**B. Time Limitation:** Five (5) business days following the receipt of the appeal materials by the Graduate School.

The Associate Dean of the Graduate School or designee shall forward the appeal and all documentation to the chair of the Graduate Appeals Committee for distribution to the members of the Committee for consideration.

**C. Time Limitation:** Five (5) business days following the receipt of the appeal materials by the Committee.

If the Graduate Appeals Committee finds that the appeal does not merit a hearing, the student's appeal is denied, and all concerned parties shall be notified by the Associate Dean of the Graduate School or designee.

**D. Time Limitation:** Twenty (20) business days following the receipt of the appeal materials by the Committee. If the Committee finds the merits a hearing, the Committee shall notify the Associate Dean of the Graduate School or designee. The Associate Dean of the Graduate School or designee will then notify the student, department chair, and college Associate Dean / Director of Graduate Studies and will provide information regarding the hearing process, including the option of the student bringing an



advisor to the hearing and the ability to meet online if remote access is needed. A hearing will be scheduled in which the student, department chair (or designee), and Associate Dean / Director of Graduate Studies (or their designees) are invited to present their cases before the Graduate s Committee. All efforts will be made to schedule the hearing at a mutually agreeable time and within a reasonable time after receipt of the appeal, but no later than twenty (20) business days after receipt of the appeal absent extenuating circumstances.

**E. Time Limitation:** Five (5) business days following the hearing.

The Graduate Appeals Committee will report their decision to the Associate Dean of the Graduate School or designee who will notify the student, department chair, and Associate Dean / Director of Graduate Studies in writing.

**F. Time Limitation:** Five (5) business days following the Committee's decision.

If the Graduate Appeals Committee finds that the student should be reinstated, it shall be empowered to reinstate the student. The Associate Dean of the Graduate School or designee will notify all concerned parties, including the student, their department, and the Associate Dean / Director of Graduate Studies in writing of the decision and reasons supporting the decision. Reinstatements may be subject to conditions as imposed by the Graduate Appeals Committee, including participation in a remediation plan.

**G.** If the student believes administrative or procedural oversights occurred during the appeal process that adversely affected the student's case, the student can consult the Dean of the Graduate School who will confer with the Graduate Appeals Committee prior to their making a final decision.

**H.** The decision of the Graduate Appeals Committee will be final.

## Academic Misconduct

Graduate students at the University of Memphis are expected to observe the regulations and policies that govern the behavior of students as members of this academic community. These regulations and policies are published in the Code of Student Rights & Responsibilities. In particular, graduate students should become familiar with the University's policies on plagiarism in its various forms. Furthermore, term papers may not be used to meet the requirements of more than one course unless approved in advance by both instructors.

The University of Memphis Code of Student Rights & Responsibilities defines academic misconduct as all acts of cheating, plagiarism, forgery, and falsification.

The term plagiarism includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full or clear acknowledgement. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

Academic misconduct also includes furnishing false information to a University official, faculty member, or office; or the forgery, alteration, or misuse of any University document, record, or instrument of identification. The Office of Student Accountability addresses allegations of academic misconduct.

## Academic Probation

A graduate student whose cumulative grade point average drops below 3.00 will be placed on probation. A second consecutive semester on probation can result in termination. Conditions under which continuation in the Graduate School beyond two consecutive semesters on probation will be granted must be recommended by the academic unit program directors/ coordinator of the program and approved by the director of graduate studies in the student's college and the Dean of Graduate School.

If, in the opinion of the academic unit, and the Graduate School, a degree-seeking student is not making satisfactory progress toward degree completion, the student may be dismissed from the degree program. If, in the opinion of the academic unit in which the student is enrolled in coursework, and the Graduate School, a non-degree-seeking student is not making satisfactory progress toward licensure, certification, or program admission, the student may be dismissed from their graduate program.

## Graduate Faculty

The University of Memphis maintains three levels of graduate faculty: full, associate, and external. Only full graduate faculty members may chair doctoral committees. Full or associate graduate faculty may chair master's committees. Full members of the Graduate Faculty may direct dissertations and associate members may direct theses in an academic unit other than their own at the discretion of the graduate coordinator and/or the chair of that department. External graduate faculty may be members of doctoral and master's committees in their areas of expertise, but may not chair them.

No more than one external graduate faculty member may serve as a voting member of a student's committee. Membership in the Graduate faculty is required in order to teach 6000 level graduate courses or above. An emeritus faculty member continues to serve as a dissertation chairman under the condition that the supervised dissertation has passed a proposal defense before the emeritus faculty member retires.

The Southern Association of Colleges and Schools requires that faculty teaching graduate and post-baccalaureate course work have an earned a doctoral or terminal degree in the teaching discipline or a related discipline. All departmental graduate coordinators should be members of the Graduate Faculty.

Additional information pertaining to application for graduate faculty status, including the Guidelines and Procedures for Graduate Faculty Status, is available on-line or can be obtained from the Graduate School.

## Regulatory Issues

**Human Subjects:** All University of Memphis faculty, staff, or students who propose to engage in any research or scholarly activity involving the use of human subjects must have prior approval from the Institutional Review Board (IRB). The IRB is responsible for safeguarding rights and welfare of all persons participating in research or scholarly projects, whether funded or non-funded. Human subjects means a living individual about whom an investigator (whether professional or student) conducting research obtains: (1) data through intervention or interaction with the individual, or (2) identifiable private information. Research means a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge. For further information, contact the IRB coordinator in the Office of Research Support Services.

**Vertebrate Animals:** All uses of vertebrate animals must receive prior approval from the Institutional Animal Care and Use Committee (IACUC).

**Biohazards:** Research involving recombinant DNA, radioisotopes, or other hazardous material must receive prior approval by the Institutional Biosafety Committee.

## Privacy Rights of Parents and Students

The University complies fully with the Family Educational Rights and Privacy Act (FERPA) of 1974. This act is designed to protect the privacy of educational records, to establish the right of students to inspect and review their educational records, and to provide guidelines for the correction of inaccurate or misleading data through informal and formal hearings. Students also have the right to file complaints with the FERPA Office concerning alleged failures by the institution to comply with the Act.

Schools may disclose, without consent, "directory" information such as a student's name, address, telephone number, date and place of birth, honors and awards, and dates of attendance. However, schools must tell parents and eligible students about directory information and allow parents and eligible students a reasonable amount of time to request that the school not disclose directory information about them. Schools must notify parents and eligible students annually of their rights under FERPA. The actual means of notification (special letter, inclusion in a PTA bulletin, student handbook, or newspaper article) is left to the discretion of each school.

For additional information, you may call 1-800-USA-LEARN (1-800-872-5327) (voice). Individuals who use TDD may call 1-800-437-0833.

Or you may contact us at the following address:

Family Policy Compliance Office  
U.S. Department of Education  
400 Maryland Avenue, SW  
Washington, D.C. 20202-8520

The provisions for the release of information about students and the rights of students and others to have access to the University of Memphis education records are published each semester in the online class listing. A copy of the Act and the University of Memphis Procedure may be reviewed in the offices of the Registrar or University Counsel.

# Academic Services

## Academic Common Market

Participation in the Academic Common Market allows qualified students from southern states to pay in-state tuition while pursuing certain degree programs at The University of Memphis. This arrangement is available only for students whose home states do not offer the designated program. The state in which the student resides determines which of the programs offered by The University of Memphis it will make available to its students.

The Academic Common Market is sponsored by the Southern Regional Education Board (SREB). Participating states are Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia (Florida and Texas grant access for graduate level programs only). Current SREB common market guidelines and requirements may be found on the web at <https://www.sreb.org/>

Students may request through their home state coordinators that additional programs be made accessible. A list of the state coordinators with their addresses and telephone numbers may be obtained from the Office of Curriculum Planning or from the Academic Common Market web site at <https://www.sreb.org/>

In addition to certification requirements that the student's state of residence may specify, the following pertain: (1) students must be fully admitted to a degree program that has been approved as an Academic Common Market program (non-degree students are ineligible); (2) students must obtain a letter certifying residency, term of entry, and approval for the particular University of Memphis program from their state's Academic Common Market coordinator.

**NOTE:** After enrollment, students remain eligible for in-state tuition only so long as they are continuously enrolled—consecutive fall and spring terms—in the same major for which they were originally certified. If students change major, they must process a Change of Major through their advisor and notify the Office of Admissions to change the Academic Common Market residency code on their records. Failure to process the Change of Major and to notify the Office of Admissions may subject the student to out-of-state fees for all subsequent terms of enrollment in classes for a major other than the one for which the student received ACM certification. Missing a fall or spring term of enrollment or a change of major requires that the student be recertified through the ACM coordinator in the student's state of residence.

## Academic Personnel Services

The Office of Academic Personnel Services conducts The University of Memphis' program for student evaluation of instruction. The Student Instructional Rating Systems (SIRS) uses a comprehensive approach for collecting, analyzing, and reporting student reactions to certain aspects of classroom instruction. All teaching faculty are required to participate in the student evaluation program. SIRS are not to be administered during the week of final exams. Faculty receive the completed forms and a computer generated summary at the beginning of the following semester. These documents, which are an important part of the dossier prepared for tenure and promotion, also provide useful information to individual faculty members for course development and/or improvement of instruction.

## Cecil C. Humphreys

The Cecil C. Humphreys School of Law offers a program of instruction leading to the degree of Juris Doctor.

Admission to the Cecil C. Humphreys School of Law is on a selective basis. To be eligible for admission, a student must have received a bachelor's degree from an accredited college or university and must have made a satisfactory score on the Law School Admission Test. Questions concerning additional admissions requirements should be addressed to the Assistant Dean for Admissions, Recruitment, and Scholarships at [lawadmissions@mail.law.memphis.edu](mailto:lawadmissions@mail.law.memphis.edu).

The regulations and policies of the School of Law are set out in greater detail in the Law School Bulletin. Additional information can be obtained by contacting Law Admissions, 3715 Central Avenue, Memphis, TN 38152, or visit the Cecil C. Humphreys School of Law home page at [www.law.memphis.edu](http://www.law.memphis.edu).

## Disability Resources for Students

The Disability Resources for Students Office provides, arranges, and coordinates academic accommodations and support services to qualified students with disabilities to enable them to fully access the educational opportunities at The University of Memphis. To establish eligibility for disability accommodations and services, students are required to register with the Disability Resources for Students Office and provide current medical or psycho-educational documentation of the disability from a professional who is appropriately qualified to diagnose the particular disability.

Disability information is strictly confidential, is not released without written consent, and does not appear on transcripts or any permanent record of the University.

Students must follow established university procedures for obtaining accommodations and services. Specific accommodations and services are determined on an individual basis and are based on documented functional limitations resulting from the disability. Services available include orientation to disability services, assessment of disability related needs, academic accommodation plans each semester, test accommodations, books on tape, note-takers, readers, scribes, interpreters, Braille, enlarged print, loan of adaptive aids and special equipment, adaptive computer lab, guidance and counseling, adapted campus housing, accessible parking, and limited campus shuttle service.

Since some services require advance notice, applicants are requested to provide sufficient notice to Disability Resources for Students of anticipated needs and expected date of enrollment. For more detailed information, please contact the Director of Disability Resources for Students at 901.678.2880.

## Extended Programs

Extended Programs provides credit and non-credit educational opportunities, both on and off-campus, and through innovative educational methods, such as video-assisted courses and online courses. Extended Programs also provides support for Tennessee Public Service activities.

The Office of Public Services is a prime contact for individuals and organizations outside the University. Through this office, access may be gained to University facilities and resources.

Professional and Contract Training features Custom Corporate Training, Online Sales & Marketing Certification, Business & Career Development, The Global Marketplace, Human Resources Training, Corporate Technology, Small Business Development, Foreign Languages, On-Line Courses, Real Estate & Real Estate Appraisal, National Safety Council Defensive Driving Course, Regents Online Continuing Education, and MidSouth Training Program.

Jackson Center is located on the campus of Jackson State Community College, offers a wide variety of graduate and undergraduate courses and degree programs to students living in the Jackson area. In addition, the Jackson Center houses the Office of Extended Programs, which coordinates course and program delivery at various locations in West Tennessee.

The Keep Tennessee Beautiful program, established in 1983, serves as the state Keep America Beautiful agency and state resource center for litter prevention and proper solid waste management education. Keep Tennessee Beautiful is funded by Tennessee Department of Transportation.

For more information, please contact Extended Programs at 901.678.2991 or visit their website at: [www.memphis.edu/extended/](http://www.memphis.edu/extended/).

## **International Students Services in the Center for International Education Services**

International Student Services (ISS), at the Center for International Education Services (CIES) advises international students, faculty, staff, visiting scholars, and researchers regarding federal regulations from the Department of Homeland Security, Immigration and Customs Enforcement; health insurance matters; and employment issues. In addition, the Center prepares federal documents necessary for internationals in certain visa categories, as well as meeting the SEVIS requirements set by the U.S. Department of Homeland Security.

ISS produces the federally mandated orientation for F-1 and J-1 visa holders new to campus. ISS also frequently provides this information for in-country dependent family members of students, faculty, and researchers on campus, as well as to international applicants to the University and area colleges and University staff.

ISS advises the International Students Association and several other international student clubs. Annual events include International Night, International Education Week, Diwali, and India Fest among various other cultural events.

Currently, ISS consists of Rebecca Laumann, Executive Director, CIES; Clar Nunis, ISS Intermin Assistant Director, ISS; Gail Warren, and Brenda Cowans. For more information, please visit the website at: [www.memphis.edu/cies/iss](http://www.memphis.edu/cies/iss).

## **Mid South ACT**

Mid-South ACT provides services for individuals of all ages with disabilities in the areas of assistive technology and augmentative alternative communication in West Tennessee, East Arkansas, and North Mississippi. These technologies allow all individuals with special needs access to the world. The Center provides services and information to teachers, students, consumers, and caregivers regarding assistive technology. This is a "hands-on" center set up for the purposes of hardware and software preview and assistive technology evaluation.

## **Minority Affairs**

The Office of Minority Affairs houses such registered student organizations as the Black Student Association, Black Scholars Unlimited, the Hispanic Student Association, NAACP, and the Minority Association of Pre-Health Students. The office provides a venue where student groups as well as individuals can go to study, use office equipment, and interact with their peers and the office staff. In addition, the office deals with academic, social, and personal concerns that the students may need to address.

The Office of Minority Affairs also serves as a resource for students, providing information on scholarships, internships, employment opportunities, and community resources available to them. The office also works in conjunction with various other campus departments as well as community agencies to provide students with services that may assist them in academic and professional endeavors.

For more information, call 901.678.2054.

## **Oak Ridge Associated Universities**

Since 1971, students and faculty of the University of Memphis have benefited from its membership in Oak Ridge Associated Universities (ORAU). ORAU is a consortium of 91 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 at [www.ornl.gov/orise/educ.htm](http://www.ornl.gov/orise/educ.htm) or by calling either of the contacts below.

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.

For more information about ORAU and its programs, contact Dr. Andrew W. Meyers, Vice Provost for Research, ORAU Councilor for The University of Memphis, at 901.678.2590; Monnie E. Champion, ORAU Corporate Secretary, at 865.576.3306; or the ORAU Home Page at [www.ornl.gov](http://www.ornl.gov).

## **Psychological Services Center**

The Psychological Services Center offers psychotherapy and psychological evaluation services to children and adults. The clinic is open to the general public, as well as the University community. Fees are reduced for university students, staff, and faculty. The Center is located in room 126 of the Psychology Building. For appointments or information, contact the Center at 901.678.2147.

# Research Resources

## Library Facilities

The University Libraries includes the Ned R. McWherter Library and four branch libraries: Audiology and Speech-Language Pathology, Chemistry, Mathematical Sciences, and Music. Each branch is contiguous to the department or school it serves.

The University Libraries' collection totals over one million print volumes. The collection also contains information resources in many other formats, including 3.4 million microform pieces, over 9 million archival pieces, 90 licensed databases, 500 federal databases, and a variety of other formats. The Government Publications Department, located in McWherter Library, is the Regional Depository for Federal Documents for the State of Tennessee. The department also serves as a depository for all State of Tennessee documents. The Special Collections Department houses collections of original papers, manuscripts, and rare materials that document the history and culture of the mid-south.

The University Libraries' holdings are indexed in the tomCat online catalog, which is available on over 200 workstations located throughout the libraries, on the campus network, and through the Internet. Faculty and staff of the University Libraries are available to assist library users with identifying and making the best use of library resources. The Interlibrary Loan staff will borrow resources from other libraries when they are not owned by the University Libraries. The University Libraries maintains agreements with several local academic libraries that enable direct borrowing by students, faculty, and staff of the University of Memphis. For more information on library services or resources, contact the Reference Department or visit the libraries web site.

## Information Technology

The University of Memphis is committed to providing campus-wide information technology in support of research and instruction for students and faculty. The Division of Information Technology (IT) provides the infrastructure and support necessary for academic activities, networking, telecommunications, and administrative computing. The division provides education and training for widely used software and applications, maintains the campus information technology infrastructure, provides the leadership to involve students, faculty, and staff in technology decision-making, and leads the strategic planning process for the use of information technologies.

The IT HelpDesk (901.678.8888) is the first area of contact for students, staff, and faculty to establish accounts and report problems. The HelpDesk staff is the primary contact on questions related to software, telecommunications, network, and lab support. In addition they route and track questions to the most appropriate university personnel for resolution. Since the University operates on a Local Support Provider (LSP) model (i.e., schools and colleges as well as administrative units have departmental computer experts to assist them with technology), calls to the HelpDesk are frequently assigned to an LSP for resolution. However, the knowledge management system of the HelpDesk tracks the problem and its resolution for future reference. The HelpDesk also makes available desktop and server software for faculty computers and departmental servers.

Students can access two IT-supported 24-hour computer labs (one of which is a Super Lab and Smart Classroom) and over 65 other departmental labs located in various buildings and residence halls throughout the University. Over 30 smart classrooms with a full range of multimedia equipment are available for use by all faculty members and each classroom building is equipped with EduCarts (SmartCarts) that can turn almost any classroom into a "smart room." Many departmental labs have extended evening and weekend hours and students have access to the Internet, e-mail, Microsoft software, and a host of academic-related applications in a variety of computing environments. All labs are equipped with printers and other peripheral devices.

Information Technology provides a variety of technology support services to faculty, staff, and students including software training, software distribution, and web consulting. The Advanced Learning Center (ALC) provides consulting assistance for on-line and web-assisted course development. Students and faculty can attend free training seminars at the Training Center in Smith 412. The center is equipped with PCs, Macs, and smart presentation equipment. Faculty may reserve this facility as well as any of the smart classrooms for their instructional needs. Training courses and workshops are offered on all supported software. The Faculty Resource area in the Advanced Learning Center contains the latest multimedia and computer equipment for faculty and



instructors to learn technologies or create course material. Online CBT (Computer-Based Training) is available free to all students, faculty, and staff either over the web or through downloadable tutorials. There are currently over 200 courses available to choose from.

Information Technology supports and maintains the University's fiber network that connects all offices, computer labs, classrooms and auditoriums, and selected residence halls. IT is committed to advancing the use of technology to assist the University in education and research. As part of this effort, The University of Memphis is a full partner and an Early Adopter of Internet-2 technology for research and instruction.

IT provides all telecommunication services (such as FAX and long distance service), cable TV, and calling number ID. Most of these services are also available in the dormitories.

More information on the services provided by Information Technology can be found at: [www.memphis.edu/its](http://www.memphis.edu/its).

## **Benjamin Hooks Institute for Social Change**

The Institute pursues a broad programmatic agenda of research and outreach that builds upon Dr. Hooks' lifetime of work to achieve a more just society. The Hooks Institute is committed to advancing the goals of the American Civil Rights Movement, and making Memphis a national center for the study of the Civil Rights Movement and its legacy. [www.memphis.edu/benhooks](http://www.memphis.edu/benhooks)

## **Bureau of Business and Economic Research**

The Bureau of Business and Economic Research is the organized research and public service unit of the Fogelman College of Business and Economics. The programs of the Bureau include public service to government agencies (state and local) and the business community, continuing education, and applied general research. [www.memphis.edu/sbber](http://www.memphis.edu/sbber)

## **Center for Applied Psychological Research**

The Center for Applied Psychological Research supports research on problems concerning health, mental health, education, schools, crime, the environment, and children and their families. The Center also supports basic scientific research in cognitive psychology, biopsychology, social psychology, developmental psychology, and research design and statistics. [memphis.edu/psychology/centers/capr.php](http://memphis.edu/psychology/centers/capr.php)

## **Center for Earthquake Research and Information**

The Center for Earthquake Research and Information was established in 1977 by the Tennessee Legislature to provide: (1) prompt reports and background information on regional earthquakes; (2) scientific research on the causes and effects of earthquakes and on the possibility of earthquake prediction; (3) studies related to the desirability of earthquake resistant construction; and (4) advice to business, government, and the public on the methods, means, and feasibility of mitigating earthquake hazards.

The Center operates as a research organization of The University of Memphis and was designated as a Tennessee Center of Excellence in 1985. It supports graduate research in geophysics, active tectonics, and earthquake engineering. It cooperates with the Department of Earth Sciences in offering a Bachelor's and Master's degree concentration in geophysics, and a Ph.D. degree in earth sciences. [www.memphis.edu/ceri](http://www.memphis.edu/ceri)

## **Center for Health Services Research**

The Center for Health Services Research is housed in the Division of Health Administration. The Center emphasizes collaborative, multi-disciplinary research focusing on issues in health care management, leadership, financing, economics, and administration. The Center's goal is to serve as a strong partner and resource for health care organizations, both public and private, in the Mid-South region. [www.memphis.edu/health](http://www.memphis.edu/health)

## **Center for Manpower Studies**

The Center for Manpower Studies, located in the Fogelman College of Business and Economics, conducts research on employment and training-related topics and provides technical assistance to federal, state, and local agencies. It also offers a variety of training programs for human resource development agencies throughout the southeast.

## **Center for Research in Educational Policy**

The Center for Research in Educational Policy is funded by the State of Tennessee as one of five Centers of Excellence located at The University of Memphis. CREP's mission is to implement a research agenda associated with educational policies and practices in the preK-12 public schools of Tennessee and the nation and to provide a knowledge base for use by educational practitioners and policymakers. Research outcomes are intended not only to describe the complexities of educational phenomena, but also to offer recommendations for action.

Since 1989, the Center has served as a mechanism for mobilizing community and university resources to address educational problems and to meet the University's commitment to primary and secondary schools. The Center's research agenda is developed through analysis of persistent or emerging issues in schools and their communities, changes occurring in teacher education programs, and recommendations from educational authorities. In the past decade, CREP has gained national recognition for its contribution to discussions of issues such as reform of teacher education, educational equity, educational technology, school reform and restructuring, urban and multicultural education, interventions for at-risk students, and using formative evaluation methods for school improvement decision-making.

## **Center for the Study of Higher Education**

The Center for the Study of Higher Education, located in the College of Education, Health and Human Sciences, conducts research and sponsors workshops and conferences in higher and adult education. The Community College Student Experiences Questionnaire is located in the Center, as is the Leadership Institute in Judicial Education. [www.memphis.edu/cshe](http://www.memphis.edu/cshe)

## **Center for Urban Research and Extension**

The Center for Urban Research and Extension provides technical assistance, research and other services for neighborhood improvement in three Memphis Enterprise Neighborhoods. The Center supports the City of Memphis' Enterprise Community program, and collaborates with neighborhood residents as they embark upon various efforts in revitalizing their neighborhood.

## **Chucalissa Indian Village and Museum (C.H. Nash Museum)**

This partly reconstructed prehistoric Indian village on its original site and the museum are operated by the Department of Anthropology as an educational and research facility. The indoor and outdoor exhibits are designed to reconstruct prehistoric Indian life in the Mid-South. Students are trained in the techniques of excavation, restoration and museum operations. The

courses taught are listed in the Department of Anthropology offerings. Chucalissa is located 17 miles southwest of the main campus along the Mississippi River. [www.memphis.edu/chucalissa](http://www.memphis.edu/chucalissa)

## **DNA Laboratory**

The DNA Laboratory is a university facility providing access to resources required for modern molecular biology research. Custom nucleic acid synthesis and automated DNA sequencing are available on a fee basis to researchers both inside and outside the University. The Laboratory also houses a high-performance gel documentation system and a workstation with the GCG Wisconsin Package for nucleic acid and protein analysis.

## **Ecological Research Center**

The Ecological Research Center (ERC) of the Department of Biological Sciences was established in 1974 on the South Campus of the University to conduct and coordinate research, teaching, and service activities in ecology and related areas.

Major areas of research include: fish culture, wildlife biology, endangered and threatened species, systematics, reproductive physiology, and physiological responses to the environment. The ERC has formal research agreements with private, state, and federal organizations to jointly pursue biological problems of mutual interest. The US Fish and Wildlife Service, Wildlife and Habitat Management Office, has offices in the ERC.

The teaching program of the ERC provides training for students interested in pursuing careers in various fields and affords an opportunity for students to participate in activities involving contemporary environmental problems.

Public service activities are directed toward promoting environmental awareness and providing information and consultation services to those concerned with the environment.

## **Edward J. Meeman Biological Station**

The Edward J. Meeman Biological Station was established in 1967 to encourage and foster scientific pursuits in natural history, ecology, and environmental biology. Situated on two sites, the main research area encompasses over 600 acres adjacent to Meeman-Shelby Forest State Park. The second site sits on over 300 acres along the Loosahatchie River in Bartlett. The research sites provide laboratory, classroom, and small conference facilities to faculty and students from The University of Memphis and visiting researchers. Meeman Station is an integral part of the Department of Biological Sciences and a unique site dedicated to research, teaching, and community service.

## **Institute of Egyptian Art and Archaeology**

The Institute, which was founded in 1984 and designated a Tennessee Center of Excellence in 1985, is a component of the Art Department at The University of Memphis. The Institute is dedicated to the study of the art and culture of ancient Egypt through teaching, research, exhibition, and excavation. It is staffed by Egyptologists who are faculty members of the Art Department and the History Department. Its research library consists of more than 6000 Egyptological books and periodicals including rare and out-of-print volumes. Supporting the Institute's programs is the Art Museum at the University of Memphis, which houses the Institute's growing collection of Egyptian antiquities, the largest in the Mid-South. In Egypt, the Institute sponsors an epigraphic project at the Great Hypostyle Hall of Karnak Temple in Luxor and partners with the Italian Archeological Mission to Luxor at the tomb of Hawa.

## **Institute for Intelligent Systems**

The mission of the Institute for Intelligent Systems is to explore intelligent systems in humans, animals, computers, and abstract information technologies. It is widely recognized that there are substantial limitations with the conventional systems in computer science, telecommunications, business, management, and science. Conventional systems are static, linear, brittle, inflexible, slow, or not adaptive to changes in the world. Scientists, engineers and scholars throughout the world have therefore been developing intelligent systems that are considerably more powerful. These systems are hybrids of intelligence in machines, biology, and the human mind. The research in the IIS explores new, cutting edge areas of cognitive science, artificial intelligence, complex dynamical systems, educational technologies, neural networks, evolutionary modeling, massively parallel systems, and biological systems. [www.memphis.edu/iis/](http://www.memphis.edu/iis/)

## **Integrated Microscopy Center**

The Integrated Microscopy Center (IMC) houses microscopes, including light and fluorescent microscopes, a confocal laser scanning microscope, scanning and transmission electron microscopes, and ancillary equipment used to prepare samples. The Center is a resource facility of The University of Memphis, designed to provide expertise in the use of microscopy to graduate students, faculty, and researchers at The University of Memphis and throughout the immediate area.

## **Marcus W. Orr Center for the Humanities**

The Marcus W. Orr Center for the Humanities promotes interdisciplinary research and teaching in the humanities at The University of Memphis. Its various programs including several lecture series and the sponsorship of visiting scholars, faculty seminars, and symposia are designed to encourage scholarly collaboration across departmental and college boundaries. It also seeks to promote the University's scholarly resources in the Memphis community, by offering a variety of public programs. The Center was founded in 1987 and renamed in 1991 in memory of former history professor Dr. Marcus W. Orr.

## **Speech and Hearing Center**

Located in the medical center of Memphis, this facility became affiliated with the University in 1967. An additional site is located on the South Campus. Both locations serve children and adults with communication disorders. Students at the University may receive services at no charge, while faculty and staff are seen at 50% of normal charges. The University administers and operates the Center in cooperation with the Board of Directors of the Memphis Speech and Hearing Center, Inc.

## **Other Research Units**

- Barbara K. Lipman Early Childhood Center and Research Institute
- Center for Community Health (formerly the Prevention Center)
- Center for River Studies
- Center for Health Services Research
- Center for Rehabilitative and Employment Research
- Center for Voluntary Action Research
- Computational Research on Materials Institute at U of M (CROMIUM)
- FedEx Center for Cycle Time Research
- Groundwater Institute
- Industry/University Cooperative Research Center for Biosurfaces
- Institute for Gambling Education and Research
- Memphis Alliance for Public Health Research
- Neuropsychology Research Laboratory

- Oral History Research Office
- Robert Wang Center for International Business
- Southern Music Archive
- Transportation Studies Institute

## Recognized Centers and Chairs of Excellence

The University of Memphis has been designated by the Tennessee Higher Education Commission as a location for centers and chairs of excellence. The units listed below receive special funding by the state in recognition of their status.

### Centers of Excellence

- Center for Applied Psychological Research
- Center for Earthquake Research and Information (CERI)
- Center for Research in Educational Policy
- Center for Research Initiatives and Strategies for the Communicatively Impaired
- Center of Excellence in Egyptian Art and Archaeology
- Center for Information Assurance (CfIA)

### Chairs of Excellence

- Bornblum Chair of Excellence in Judaic Studies
- Dorothy Kayser Hohenberg Chair of Excellence
- Federal Express Chair of Excellence in Management Information Systems
- Helen and Jabie Hardin Chair of Excellence in Economics/Managerial Journalism
- Herbert Herff Chair of Excellence Biomedical Engineering (I)
- Herbert Herff Chair of Excellence Biomedical Engineering (II)
- Herbert Herff Chair of Excellence in Law
- Jabie Sanford Hardin III Chair of Excellence in Combinatorics
- James T. Thompson Chair of Excellence in Accounting Education
- Lillian and Morrie Moss Chair of Excellence in Computer Science
- Lillian and Morrie Moss Chair of Excellence in Philosophy
- Lillian and Morrie Moss Chair of Excellence in Psychology
- Lillian and Morrie Moss Chair of Excellence in Urban Education
- Morris S. Fogelman Chair of Excellence in Real Estate
- Plough Chair of Excellence in Audiology and Speech-Language Pathology
- Robert Wang Chair of Excellence in International Business
- Sales and Marketing Executives Inc. Chair of Excellence in Sales
- Sparks Family Chair of Excellence in Global Research Leadership
- The University of Memphis Chair of Excellence in Free Enterprise Management
- Thompson-Hill Chair of Excellence in Accounting
- W. Harry Feinstone Chair of Excellence in Molecular Biology
- William A. and Ruth F. Loewenberg Chair of Excellence in Nursing
- William N. Morris Chair of Excellence in International Economics
- Wunderlich Chair of Excellence in Finance

## Majors A-Z (Snapshot)

<b>Program</b>	<b>Degree Offered</b>	<b>College, School, or Department</b>
<b>Applied Physiology and Neuromechanics - Applied Biomechanics Concentration, (PhD)</b>	Doctor of Philosophy	College of Health Sciences
<b>K-12 Educational Leadership Graduate Certificate</b>	Graduate Certificate	Leadership
<b>Accounting - (MS)</b>	Master of Science	School of Accountancy
<b>Accounting - Business Analysis &amp; Reporting Concentration, (MS)</b>	Master of Science	School of Accountancy
<b>Accounting - Information Systems &amp; Controls Concentration, (MS)</b>	Master of Science	School of Accountancy
<b>Accounting - Tax Compliance &amp; Planning Concentration, (MS)</b>	Master of Science	School of Accountancy
<b>Admission Requirements</b>	Graduate Certificate	University of Memphis
<b>African American Literature Graduate Certificate</b>	Graduate Certificate	English
<b>Analytical Chemistry Graduate Certificate</b>	Graduate Certificate	Chemistry
<b>Anthropology, (MA)</b>	Master of Arts	Anthropology
<b>Applied Lean Leadership Graduate Certificate</b>	Graduate Certificate	Engineering Technology
<b>Applied Physics, (PhD)</b>	Doctor of Philosophy	Physics and Materials Science
<b>Applied Physiology and Neuromechanics - Applied Physiology and Nutrition Concentration, (PhD)</b>	Doctor of Philosophy	College of Health Sciences
<b>Architecture, (MArch)</b>	Master of Architecture	Architecture
<b>Art - Ceramics Concentration, (MFA)</b>	Master of Fine Arts	Art
<b>Art - Graphic Design Concentration, (MFA)</b>	Master of Fine Arts	Art
<b>Art - Painting Concentration, (MFA)</b>	Master of Fine Arts	Art
<b>Art - Printmaking/Photography Concentration, (MFA)</b>	Master of Fine Arts	Art
<b>Art - Sculpture Concentration, (MFA)</b>	Master of Fine Arts	Art
<b>Art Education (K-12) Licensure, (MAT)</b>	Master of Arts in Teaching	Instruction and Curriculum Leadership
<b>Art History - African American - African Diaspora Art Histories, (MA)</b>	Master of Arts	Art
<b>Art History - African American and African Diaspora Art Histories Concentration with Museum Studies Certificate (MA)</b>	Master of Arts	Art
<b>Art History - Egyptian Art and Archaeology, (MA)</b>	Master of Arts	Art
<b>Art History - General Art History, (MA)</b>	Master of Arts	Art
<b>Art History - Museum Practices, (MA)</b>	Master of Arts	Art
<b>Arts Entrepreneurship Graduate Certificate</b>	Graduate Certificate	College of Communication and Fine Arts
<b>Athletic Administration Graduate Certificate</b>	Graduate Certificate	Kemmons Wilson School of Hospitality and Resort Management

<b>Program</b>	<b>Degree Offered</b>	<b>College, School, or Department</b>
<b>Audiology, (AuD)</b>	Doctor of Audiology	School of Communication Sciences and Disorders
<b>Augmentative and Alternative Communication (AAC) Graduate Certificate</b>	Graduate Certificate	School of Communication Sciences and Disorders
<b>Autism Studies Graduate Certificate</b>	Graduate Certificate	Instruction and Curriculum Leadership
<b>Aviation Human Factors Graduate Certificate</b>	Graduate Certificate	College of Professional and Liberal Studies
<b>Bioinformatics Graduate Certificate</b>	Graduate Certificate	Bioinformatics
<b>Biological Sciences, (MS)</b>	Master of Science	Biological Sciences
<b>Biological Sciences, (PhD)</b>	Doctor of Philosophy	Biological Sciences
<b>Biomedical Engineering, (MS)</b>	Master of Science	Biomedical Engineering
<b>Biomedical Engineering, (PhD)</b>	Doctor of Philosophy	Biomedical Engineering
<b>Biostatistics - (MS)</b>	Master of Science	School of Public Health
<b>Biostatistics - Data Science in Public Health Concentration, (MS)</b>	Master of Science	School of Public Health
<b>Business Administration - Accounting Concentration, (PhD)</b>	Doctor of Philosophy	School of Accountancy
<b>Business Administration - Business Economics Concentration, (MBA)</b>	Master of Business Administration	Fogelman College of Business & Economics
<b>Business Administration - Business Information Assurance Concentration, (MBA)</b>	Master of Business Administration	Fogelman College of Business & Economics
<b>Business Administration - Business Project Management Concentration, (MBA)</b>	Master of Business Administration	Fogelman College of Business & Economics
<b>Business Administration - Data Analytics for Management Concentration, (MBA)</b>	Master of Business Administration	Fogelman College of Business & Economics
<b>Business Administration - Data Analytics for Technology Concentration, (MBA)</b>	Master of Business Administration	Fogelman College of Business & Economics
<b>Business Administration - Economics Concentration, (PhD)</b>	Doctor of Philosophy	Economics
<b>Business Administration - Engineering Management Concentration, (MBA)</b>	Master of Business Administration	Fogelman College of Business & Economics
<b>Business Administration - Finance Concentration, (MBA)</b>	Master of Business Administration	Fogelman College of Business & Economics
<b>Business Administration - Finance Concentration, (MS)</b>	Master of Science	Finance, Insurance, and Real Estate
<b>Business Administration - Finance Concentration, (PhD)</b>	Doctor of Philosophy	Finance, Insurance, and Real Estate
<b>Business Administration - Healthcare Management Concentration, (MBA)</b>	Master of Business Administration	Fogelman College of Business & Economics
<b>Business Administration - Management Concentration, (PhD)</b>	Doctor of Philosophy	Management
<b>Business Administration - Management Information Systems, (PhD)</b>	Doctor of Philosophy	Business Information and Technology
<b>Business Administration - Marketing Concentration, (PhD)</b>	Doctor of Philosophy	Marketing and Supply Chain Management

<b>Program</b>	<b>Degree Offered</b>	<b>College, School, or Department</b>
<b>Business Administration - Supply Chain Management Concentration, (MBA)</b>	Master of Business Administration	Fogelman College of Business & Economics
<b>Business Administration - Taxation Concentration, (MBA)</b>	Master of Business Administration	Fogelman College of Business & Economics
<b>Business Administration (PhD)</b>	Doctor of Philosophy	Fogelman College of Business & Economics
<b>Business Administration, (MBA)</b>	Master of Business Administration	Fogelman College of Business & Economics
<b>Business Administration, (MS)</b>	Master of Science	Finance, Insurance, and Real Estate
<b>Business Economics Graduate Certificate</b>	Graduate Certificate	Economics
<b>Business Information Assurance Graduate Certificate</b>	Graduate Certificate	Business Information and Technology
<b>Business Project Management Graduate Certificate</b>	Graduate Certificate	Business Information and Technology
<b>Career and College Counseling Graduate Certificate</b>	Graduate Certificate	Counseling, Educational Psychology, and Research
<b>Chemistry, (MS)</b>	Master of Science	Chemistry
<b>Chemistry, (PhD)</b>	Doctor of Philosophy	Chemistry
<b>City and Regional Planning, (MCRP)</b>	Master of City and Regional Planning	City and Regional Planning
<b>Civil Engineering - Agricultural Engineering Concentration, (MS)</b>	Master of Science	Civil Engineering
<b>Civil Engineering - Engineering Seismology Concentration, (MS)</b>	Master of Science	Civil Engineering
<b>Civil Engineering - Environmental Engineering Concentration, (MS)</b>	Master of Science	Civil Engineering
<b>Civil Engineering - Geotechnical Engineering Concentration, (MS)</b>	Master of Science	Civil Engineering
<b>Civil Engineering - No Concentration, (MS)</b>	Master of Science	Civil Engineering
<b>Civil Engineering - Structural Engineering Concentration, (MS)</b>	Master of Science	Civil Engineering
<b>Civil Engineering - Transportation Engineering Concentration, (MS)</b>	Master of Science	Civil Engineering
<b>Civil Engineering - Water Resources Engineering Concentration, (MS)</b>	Master of Science	Civil Engineering
<b>Clinical Mental Health Counseling Graduate Certificate</b>	Graduate Certificate	Counseling, Educational Psychology, and Research
<b>Clinical Social Work Graduate Certificate</b>	Graduate Certificate	School of Social Work
<b>Cognitive Science Graduate Certificate</b>	Graduate Certificate	College of Arts & Sciences
<b>Communication Sciences and Disorders - Hearing Sciences and Disorders Concentration, (PhD)</b>	Doctor of Philosophy	School of Communication Sciences and Disorders
<b>Communication Sciences and Disorders - Neuroscience, (PhD)</b>	Doctor of Philosophy	School of Communication Sciences and Disorders



<b>Program</b>	<b>Degree Offered</b>	<b>College, School, or Department</b>
<b>Communication Sciences and Disorders - Speech-Language Sciences and Disorders Concentration, (PhD)</b>	Doctor of Philosophy	School of Communication Sciences and Disorders
<b>Communication Sciences and Disorders and Public Health Graduate Certificate</b>	Graduate Certificate	School of Communication Sciences and Disorders
<b>Communication, (MA)</b>	Master of Arts	Communication
<b>Communication, (PhD)</b>	Doctor of Philosophy	Communication
<b>Computer Science, (MS)</b>	Master of Science	Computer Science
<b>Computer Science, (PhD)</b>	Doctor of Philosophy	Computer Science
<b>Counseling - Addiction Counseling Concentration, (MS)</b>	Master of Science	Counseling, Educational Psychology, and Research
<b>Counseling - Clinical Mental Health Counseling Concentration, (MS)</b>	Master of Science	Counseling, Educational Psychology, and Research
<b>Counseling - Clinical Rehabilitation Counseling Concentration, (MS)</b>	Master of Science	Counseling, Educational Psychology, and Research
<b>Counseling - Marriage, Couple and Family Counseling, (MS)</b>	Master of Science	Counseling, Educational Psychology, and Research
<b>Counseling - School Counseling Concentration, (MS)</b>	Master of Science	Counseling, Educational Psychology, and Research
<b>Counseling - Vocational Rehabilitation Counseling Concentration, (MS)</b>	Master of Science	Counseling, Educational Psychology, and Research
<b>Counseling Psychology, (PhD)</b>	Doctor of Philosophy	Counseling, Educational Psychology, and Research
<b>Counseling, (MS)</b>	Master of Science	Counseling, Educational Psychology, and Research
<b>Counselor Education and Supervision, (PhD)</b>	Doctor of Philosophy	Counseling, Educational Psychology, and Research
<b>Creative Writing, (MFA)</b>	Master of Fine Arts	English
<b>Criminal Justice, (MA)</b>	Master of Arts	Criminology and Criminal Justice
<b>Cyber Security and Information Assurance Graduate Certificate</b>	Graduate Certificate	Computer Science
<b>Data Analytics for Management Graduate Certificate</b>	Graduate Certificate	Business Information and Technology
<b>Data Analytics for Technology Graduate Certificate</b>	Graduate Certificate	Business Information and Technology
<b>Data Science Graduate Certificate</b>	Graduate Certificate	Computer Science
<b>Data Science, (MS)</b>	Master of Science	College of Arts & Sciences
<b>Disabilities Studies Graduate Certificate</b>	Graduate Certificate	Counseling, Educational Psychology, and Research
<b>Distance Dietetics Internship Graduate Certificate</b>	Graduate Certificate	College of Health Sciences
<b>Doctor of Social Work, (DSW)</b>	Doctor of Social Work	School of Social Work
<b>Early Childhood Licensure (PreK-3), (MAT)</b>	Master of Arts in Teaching	Instruction and Curriculum Leadership
<b>Early Childhood/Special Education (PreK-3), (MAT)</b>	Master of Arts in Teaching	Instruction and Curriculum Leadership

<b>Program</b>	<b>Degree Offered</b>	<b>College, School, or Department</b>
<b>Early Music Certificate</b>	Graduate Certificate	Rudi E. Scheidt School of Music
<b>Earth Sciences - Archaeology Concentration, (MS)</b>	Master of Science	Earth Sciences
<b>Earth Sciences - Geography Concentration, (MS)</b>	Master of Science	Earth Sciences
<b>Earth Sciences - Geology Concentration, (MS)</b>	Master of Science	Earth Sciences
<b>Earth Sciences - Geophysics Concentration, (MS)</b>	Master of Science	Center for Earthquake Research and Information
<b>Earth Sciences - Geophysics Concentration, (PhD)</b>	Doctor of Philosophy	Center for Earthquake Research and Information
<b>Earth Sciences - Interdisciplinary Studies Concentration, (MS)</b>	Master of Science	Earth Sciences
<b>Earth Sciences, (MA)</b>	Master of Arts	Earth Sciences
<b>Earth Sciences, (PhD)</b>	Doctor of Philosophy	Earth Sciences
<b>Economics, (MA)</b>	Master of Arts	Economics
<b>Educational Psychology and Research, (MS)</b>	Master of Science	Counseling, Educational Psychology, and Research
<b>Educational Psychology and Research, (PhD)</b>	Doctor of Philosophy	Counseling, Educational Psychology, and Research
<b>Electrical and Computer Engineering - Computer Engineering Concentration, (MS)</b>	Master of Science	Electrical and Computer Engineering
<b>Electrical and Computer Engineering - Electrical Engineering Concentration, (MS)</b>	Master of Science	Electrical and Computer Engineering
<b>Electrical and Computer Engineering – No Concentration, (MS)</b>	Master of Science	Electrical and Computer Engineering
<b>Elementary Licensure (K-5), (MAT)</b>	Master of Arts in Teaching	Instruction and Curriculum Leadership
<b>Engineering - Civil Engineering Concentration, (PhD)</b>	Doctor of Philosophy	Civil Engineering
<b>Engineering - Computer Engineering Concentration, (PhD)</b>	Doctor of Philosophy	Electrical and Computer Engineering
<b>Engineering - Electrical Engineering Concentration, (PhD)</b>	Doctor of Philosophy	Electrical and Computer Engineering
<b>Engineering - Mechanical Engineering Concentration, (PhD)</b>	Doctor of Philosophy	Mechanical Engineering
<b>Engineering Management – Manufacturing Concentration, (MS)</b>	Master of Science	Herff College of Engineering
<b>Engineering Management – No Concentration (MS)</b>	Master of Science	Herff College of Engineering
<b>Engineering Management – Transportation Concentration, (MS)</b>	Master of Science	Herff College of Engineering
<b>Engineering Technology, (MS)</b>	Master of Science	Engineering Technology
<b>English as a Second Language (ESL) Education (preK-12), (MAT)</b>	Master of Arts in Teaching	Instruction and Curriculum Leadership
<b>English, (MA)</b>	Master of Arts	English
<b>English: Writing and Language Studies, (PhD)</b>	Doctor of Philosophy	English
<b>Entrepreneurial Media Graduate Certificate</b>	Graduate Certificate	Journalism and Strategic Media

<b>Program</b>	<b>Degree Offered</b>	<b>College, School, or Department</b>
<b>Epidemiology and Biostatistics, (PhD) - Biostatistics Concentration</b>	Doctor of Philosophy	School of Public Health
<b>Epidemiology and Biostatistics, (PhD) - Epidemiology Concentration</b>	Doctor of Philosophy	School of Public Health
<b>Faith and Health Graduate Certificate</b>	Graduate Certificate	College of Health Sciences
<b>Financial Analysis and Planning Graduate Certificate</b>	Graduate Certificate	Finance, Insurance, and Real Estate
<b>Freight Transportation Graduate Certificate</b>	Graduate Certificate	Civil Engineering
<b>General Business Graduate Certificate</b>	Graduate Certificate	Fogelman College of Business & Economics
<b>General Psychology, (MS)</b>	Master of Science	Psychology
<b>Geographic Information Systems Graduate Certificate</b>	Graduate Certificate	Earth Sciences
<b>Graphic Design Graduate Certificate</b>	Graduate Certificate	Art
<b>Health Analytics Graduate Certificate</b>	Graduate Certificate	School of Public Health
<b>Health Communication Graduate Certificate</b>	Graduate Certificate	Communication
<b>Health Studies - Exercise Nutrition, (MS)</b>	Master of Science	College of Health Sciences
<b>Health Studies - Exercise, Sport and Movement Sciences Concentration, (MS)</b>	Master of Science	College of Health Sciences
<b>Health Studies - Health Promotion Concentration, (MS)</b>	Master of Science	College of Health Sciences
<b>Health Studies - Physical Education Teacher Education Concentration, (MS)</b>	Master of Science	College of Health Sciences
<b>Health Systems Leadership Graduate Certificate</b>	Graduate Certificate	School of Public Health
<b>Higher and Adult Education, (EdD)</b>	Doctor of Education	Leadership
<b>Higher Education Instruction Graduate Certificate</b>	Graduate Certificate	Leadership
<b>History - Ancient Egyptian History Concentration, (MA)</b>	Master of Arts	History
<b>History - Ancient Egyptian History Concentration, (PhD)</b>	Doctor of Philosophy	History
<b>History, (MA)</b>		History
<b>History, (PhD)</b>	Doctor of Philosophy	History
<b>Hospitality Management Specialist Graduate Certificate</b>	Graduate Certificate	Kemmons Wilson School of Hospitality and Resort Management
<b>Human Computer Interaction</b>	Graduate Certificate	College of Education
<b>Imaging and Signal Processing Graduate Certificate</b>	Graduate Certificate	Electrical and Computer Engineering
<b>Information Systems, (MS)</b>	Master of Science	Business Information and Technology
<b>Instruction and Curriculum Leadership - Applied Behavior Analysis, (EdD)</b>	Doctor of Education	Instruction and Curriculum Leadership
<b>Instruction and Curriculum Leadership - Applied Behavior Analysis, (MS)</b>	Master of Science	Instruction and Curriculum Leadership

<b>Program</b>	<b>Degree Offered</b>	<b>College, School, or Department</b>
<b>Instruction and Curriculum Leadership - Early Childhood Education Concentration, (MS)</b>	Master of Science	Instruction and Curriculum Leadership
<b>Instruction and Curriculum Leadership - Early Childhood Education, (EdD)</b>	Doctor of Education	Instruction and Curriculum Leadership
<b>Instruction and Curriculum Leadership - Instruction and Curriculum Concentration, (MS)</b>	Master of Science	Instruction and Curriculum Leadership
<b>Instruction and Curriculum Leadership - Instruction and Curriculum, (EdD)</b>	Doctor of Education	Instruction and Curriculum Leadership
<b>Instruction and Curriculum Leadership - Instructional Design and Technology Concentration, (MS)</b>	Master of Science	Instruction and Curriculum Leadership
<b>Instruction and Curriculum Leadership - Instructional Design and Technology, (EdD)</b>	Doctor of Education	Instruction and Curriculum Leadership
<b>Instruction and Curriculum Leadership - Literacy Education Concentration, (MS)</b>	Master of Science	Instruction and Curriculum Leadership
<b>Instruction and Curriculum Leadership - Literacy Education, (EdD)</b>	Doctor of Education	Instruction and Curriculum Leadership
<b>Instruction and Curriculum Leadership - School Library Information Specialist Concentration, (MS)</b>	Master of Science	Instruction and Curriculum Leadership
<b>Instruction and Curriculum Leadership - Special Education Concentration, (MS)</b>	Master of Science	Instruction and Curriculum Leadership
<b>Instruction and Curriculum Leadership - Special Education, (EdD)</b>	Doctor of Education	Instruction and Curriculum Leadership
<b>Instruction and Curriculum Leadership- Social Studies Education Concentration (EdD)</b>	Doctor of Education	Instruction and Curriculum Leadership
<b>Instruction and Curriculum Leadership- Social Studies Education Concentration (MS)</b>	Master of Science	Instruction and Curriculum Leadership
<b>Instruction and Curriculum Leadership-STEM Education Concentration (MS)</b>	Master of Science	Instruction and Curriculum Leadership
<b>Instructional Design and Technology - Design and Development Track, Graduate Certificate</b>	Graduate Certificate	Instruction and Curriculum Leadership
<b>Instructional Design and Technology - K-12 Educational Technology Track, Graduate Certificate</b>	Graduate Certificate	Instruction and Curriculum Leadership
<b>Journalism and Strategic Media, (MA)</b>	Master of Arts	Journalism and Strategic Media
<b>Leadership and Policy Studies - Educational Leadership Concentration, (EdD)</b>	Doctor of Education	Leadership
<b>Leadership and Policy Studies - Policy Studies Concentration, (EdD)</b>	Doctor of Education	Leadership
<b>Leadership and Policy Studies - School Administration and Supervision Concentration, (MS)</b>	Master of Science	Leadership

<b>Program</b>	<b>Degree Offered</b>	<b>College, School, or Department</b>
<b>Leadership and Policy Studies - Student Affairs Administration, (MS)</b>	Master of Science	Leadership
<b>Leadership and Policy Studies, (EdD)</b>	Doctor of Education	Leadership
<b>Liberal Studies Graduate Certificate</b>	Graduate Certificate	College of Professional and Liberal Studies
<b>Liberal Studies, (DLS)</b>	Doctor of Liberal Studies	College of Professional and Liberal Studies
<b>Liberal Studies, (MALS)</b>	Master of Arts in Liberal Studies	College of Professional and Liberal Studies
<b>Literacy Leadership and Coaching Graduate Certificate</b>	Graduate Certificate	Instruction and Curriculum Leadership
<b>Local Government Management Graduate Certificate</b>	Graduate Certificate	Public and Nonprofit Administration
<b>Master of Health Administration, (MHA)</b>	Master of Health Administration	School of Public Health
<b>Master of Nonprofit Management, (MNM)</b>	Master of Nonprofit Management	Public and Nonprofit Administration
<b>Master of Public Health - Biostatistics Concentration, (MPH)</b>	Master of Public Health	School of Public Health
<b>Master of Public Health - Environmental Health Concentration, (MPH)</b>	Master of Public Health	School of Public Health
<b>Master of Public Health - Epidemiology Concentration, (MPH)</b>	Master of Public Health	School of Public Health
<b>Master of Public Health - Generalist (MPH)</b>	Master of Public Health	School of Public Health
<b>Master of Public Health – Professional Degree – 12 months (MPH)</b>	Master of Public Health	School of Public Health
<b>Master of Public Health - Social and Behavioral Sciences Concentration, (MPH)</b>	Master of Public Health	School of Public Health
<b>Master of Public Health - Urban Health Concentration, (MPH)</b>	Master of Public Health	School of Public Health
<b>Mathematical Sciences - Applied Mathematics Concentration, (MS)</b>	Master of Science	Mathematical Sciences
<b>Mathematical Sciences - Applied Statistics Concentration, (PhD)</b>	Doctor of Philosophy	Mathematical Sciences
<b>Mathematical Sciences - Mathematics Concentration, (MS)</b>	Master of Science	Mathematical Sciences
<b>Mathematical Sciences - Mathematics Concentration, (PhD)</b>	Doctor of Philosophy	Mathematical Sciences
<b>Mathematical Sciences - Statistics Concentration, (MS)</b>	Master of Science	Mathematical Sciences
<b>Mathematical Sciences - Teaching of Mathematics Concentration, (MS)</b>	Master of Science	Mathematical Sciences
<b>Mathematics Education Graduate Certificate</b>	Graduate Certificate	Instruction and Curriculum Leadership
<b>MBA/JD</b>	Master of Business Administration/Juris Doctor	Fogelman College of Business & Economics

<b>Program</b>	<b>Degree Offered</b>	<b>College, School, or Department</b>
<b>Mechanical Engineering, (MS)</b>	Master of Science	Mechanical Engineering
<b>MHA/MBA</b>		School of Public Health
<b>Multimedia Storytelling Graduate Certificate</b>	Graduate Certificate	Journalism and Strategic Media
<b>Multi-Tier Systems of Support Graduate Certificate</b>	Graduate Certificate	Instruction and Curriculum Leadership
<b>Museum Studies Graduate Certificate</b>	Graduate Certificate	Art
<b>Music - Artist Diploma Certificate</b>	Graduate Certificate	Rudi E. Scheidt School of Music
<b>Music - Composition Concentration, (DMA)</b>	Doctor of Musical Arts	Rudi E. Scheidt School of Music
<b>Music - Composition Concentration, (MMu)</b>	Master of Music	Rudi E. Scheidt School of Music
<b>Music - Conducting Concentration, (DMA)</b>	Doctor of Musical Arts	Rudi E. Scheidt School of Music
<b>Music - Conducting Concentration, (MMu)</b>	Master of Music	Rudi E. Scheidt School of Music
<b>Music - Jazz and Studio Music Concentration, (MMu)</b>	Master of Music	Rudi E. Scheidt School of Music
<b>Music - Music Education Concentration, (MMu)</b>	Master of Music	Rudi E. Scheidt School of Music
<b>Music - Music Education Concentration, (PhD)</b>	Doctor of Philosophy	Rudi E. Scheidt School of Music
<b>Music - Musicology Concentration, (MMu)</b>	Master of Music	Rudi E. Scheidt School of Music
<b>Music - Musicology Concentration, (PhD)</b>	Doctor of Philosophy	Rudi E. Scheidt School of Music
<b>Music - Orff-Schulwerk Concentration, (MMu)</b>	Master of Music	Rudi E. Scheidt School of Music
<b>Music - Pedagogy Concentration, (MMu)</b>	Master of Music	Rudi E. Scheidt School of Music
<b>Music - Performance Concentration, (DMA)</b>	Doctor of Musical Arts	Rudi E. Scheidt School of Music
<b>Music - Performance Concentration, (MMu)</b>	Master of Music	Rudi E. Scheidt School of Music
<b>Music Education (K-12), (MAT)</b>	Master of Arts in Teaching	Instruction and Curriculum Leadership
<b>Nursing - Advanced Practice Nursing (Family Nurse Practitioner) Concentration, (MSN)</b>	Master of Science in Nursing	Loewenberg College of Nursing
<b>Nursing - Executive Leadership Concentration, (MSN)</b>	Master of Science in Nursing	Loewenberg College of Nursing
<b>Nursing - Nursing Education Concentration, (MSN)</b>	Master of Science in Nursing	Loewenberg College of Nursing
<b>Nursing Education Graduate Certificate</b>	Graduate Certificate	Loewenberg College of Nursing
<b>Nursing Executive Leadership Post-Graduate Certificate</b>	Post-Master's Certificate	Loewenberg College of Nursing
<b>Nursing Family Nurse Practitioner Post-Graduate Certificate</b>	Post-Master's Certificate	Loewenberg College of Nursing
<b>Nursing, (PhD)</b>	Doctor of Philosophy	Loewenberg College of Nursing
<b>Nutrition - Clinical Nutrition Concentration, (MS)</b>	Master of Science	College of Health Sciences
<b>Nutrition - Environmental Nutrition Concentration, (MS)</b>	Master of Science	College of Health Sciences
<b>Nutrition - Nutrition Science Concentration, (MS)</b>	Master of Science	College of Health Sciences
<b>Organic Chemistry Graduate Certificate</b>	Graduate Certificate	Chemistry

<b>Program</b>	<b>Degree Offered</b>	<b>College, School, or Department</b>
<b>Philanthropy and Nonprofit Leadership Graduate Certificate</b>	Graduate Certificate	Public and Nonprofit Administration
<b>Philosophy, (MA)</b>	Master of Arts	Philosophy
<b>Philosophy, (PhD)</b>	Doctor of Philosophy	Philosophy
<b>Physics - Computational Physics, Non-thesis, (MS)</b>	Master of Science	Physics and Materials Science
<b>Physics - Computational Physics, Thesis, (MS)</b>	Master of Science	Physics and Materials Science
<b>Physics - General Physics Concentration, Non-Thesis option, (MS)</b>	Master of Science	Physics and Materials Science
<b>Physics - General Physics Concentration, Thesis Option, (MS)</b>	Master of Science	Physics and Materials Science
<b>Physics - Materials Science Concentration, Non-Thesis, (MS)</b>	Master of Science	Physics and Materials Science
<b>Physics - Materials Science Concentration, Thesis, (MS)</b>	Master of Science	Physics and Materials Science
<b>Play Therapy Graduate Certificate</b>	Graduate Certificate	School of Social Work
<b>Political Science, (MA)</b>	Master of Arts	Political Science
<b>Political Science, (MA/JD)</b>	Master of Arts/Juris Doctor	Political Science
<b>Population Health Graduate Certificate</b>	Graduate Certificate	School of Public Health
<b>Population Health Informatics Graduate Certificate</b>	Graduate Certificate	School of Public Health
<b>Professional Real Estate Graduate Certificate</b>	Graduate Certificate	University of Memphis
<b>Professional Studies, (MPS)</b>	Master of Professional Studies	College of Professional and Liberal Studies
<b>Program Requirements</b>	Graduate Certificate	University of Memphis
<b>Program Requirements</b>	Graduate Certificate	University of Memphis
<b>Psychology - Clinical Psychology, (PhD)</b>	Doctor of Philosophy	Psychology
<b>Psychology - Experimental Psychology, (PhD)</b>	Doctor of Philosophy	Psychology
<b>Psychology - School Psychology, (PhD)</b>	Doctor of Philosophy	Psychology
<b>Public Administration, (MPA)</b>	Master of Public Administration	Public and Nonprofit Administration
<b>Public Health, (MPH/JD)</b>	Master of Public Health/Juris Doctor	University of Memphis
<b>Qualitative Studies in Education Graduate Certificate</b>	Graduate Certificate	Counseling, Educational Psychology, and Research
<b>Quantitative Studies in Educational Research Graduate Certificate</b>	Graduate Certificate	Counseling, Educational Psychology, and Research
<b>Romance Languages, (MA)</b>	Master of Arts	Foreign Languages and Literatures
<b>School Counseling Graduate Certificate</b>	Graduate Certificate	Counseling, Educational Psychology, and Research
<b>School Library Information Specialist Graduate Certificate</b>	Graduate Certificate	Instruction and Curriculum Leadership
<b>School Psychology, (EdS)</b>	Education Specialist	College of Arts & Sciences

<b>Program</b>	<b>Degree Offered</b>	<b>College, School, or Department</b>
<b>School Psychology, (MA)</b>	Master of Arts	Psychology
<b>School Psychology, (MA/EdS)</b>	Master of Arts/Education Specialist	Psychology
<b>School Social Work Graduate Certificate</b>	Graduate Certificate	School of Social Work
<b>Secondary Education Graduate Certificate</b>	Graduate Certificate	College of Education
<b>Secondary Licensure, (MAT)</b>	Master of Arts in Teaching	Instruction and Curriculum Leadership
<b>Social and Behavioral Sciences, (PhD)</b>	Doctor of Philosophy	School of Public Health
<b>Social Media Analysis and Strategy Graduate Certificate</b>	Graduate Certificate	Journalism and Strategic Media
<b>Social Work - Advanced Social Work Practice Across Systems Concentration, (MSW)</b>	Master of Social Work	School of Social Work
<b>Social Work - Advanced Standing, (MSW)</b>	Master of Social Work	School of Social Work
<b>Social Work (MSW)</b>	Master of Social Work	School of Social Work
<b>Social Work, (MSW/MPH)</b>	Master of Social Work/Master of Public Health	School of Social Work
<b>Social Work, (MSW/MS)</b>	Master of Social Work/Master of Science	School of Social Work
<b>Sociology, (MA)</b>	Master of Arts	Sociology
<b>Software Testing Graduate Certificate</b>	Graduate Certificate	Business Information and Technology
<b>Special Education - Comprehensive (K-12) Licensure, (MAT)</b>	Master of Arts in Teaching	Instruction and Curriculum Leadership
<b>Special Education - Early Childhood (PreK-1) Licensure, (MAT)</b>	Master of Arts in Teaching	Instruction and Curriculum Leadership
<b>Special Education - Interventionist Licensure, (MAT)</b>	Master of Arts in Teaching	Instruction and Curriculum Leadership
<b>Special Education Comprehensive Graduate Certificate</b>	Graduate Certificate	Instruction and Curriculum Leadership
<b>Special Education Licensure, (MAT)</b>	Master of Arts in Teaching	Instruction and Curriculum Leadership
<b>Speech-Language Pathology, (MA)</b>	Master of Arts	School of Communication Sciences and Disorders
<b>Sport and Hospitality Management – Hospitality Management Concentration, (MS)</b>	Master of Science	Kemmons Wilson School of Hospitality and Resort Management
<b>Sport and Hospitality Management – Sport Commerce Concentration, (MS)</b>	Master of Science	Kemmons Wilson School of Hospitality and Resort Management
<b>Sport Nutrition and Dietary Supplementation Graduate Certificate</b>	Graduate Certificate	College of Health Sciences
<b>STEM (Science, Technology, Engineering, and Mathematics) Teacher Leadership Graduate Certificate</b>	Graduate Certificate	Instruction and Curriculum Leadership



<b>Program</b>	<b>Degree Offered</b>	<b>College, School, or Department</b>
<b>Strategic Leadership Graduate Certificate</b>	Graduate Certificate	College of Professional and Liberal Studies
<b>Substance Abuse Interprofessional Graduate Certificate</b>	Graduate Certificate	School of Social Work
<b>Supply Chain Management Graduate Certificate</b>	Graduate Certificate	Marketing and Supply Chain Management
<b>Taxation Graduate Certificate</b>	Graduate Certificate	School of Accountancy
<b>Teaching English to Speakers of Other Languages Graduate Certificate</b>	Graduate Certificate	English
<b>Teaching of Mathematics Graduate Certificate</b>	Graduate Certificate	Mathematical Sciences
<b>Theatre - Design and Technical Production Concentration, (MFA)</b>	Master of Fine Arts	Theatre and Dance
<b>Theatre - Directing Concentration, (MFA)</b>	Master of Fine Arts	Theatre and Dance
<b>Urban Affairs, (PhD)</b>	Doctor of Philosophy	School of Urban Affairs and Public Policy
<b>Urban Education Graduate Certificate</b>	Graduate Certificate	Instruction and Curriculum Leadership
<b>Vocology Graduate Certificate</b>	Graduate Certificate	Rudi E. Scheidt School of Music
<b>Women's and Gender Studies Graduate Certificate</b>	Graduate Certificate	College of Arts & Sciences
<b>World Languages Education, (MAT)</b>	Master of Arts in Teaching	College of Education
<b>Writing Studies Graduate Certificate</b>	Graduate Certificate	English

# Degree Programs (All Programs)

Graduate and prospective students are responsible for being thoroughly familiar with the rules, regulations, and degree requirements of the Graduate School and of the academic departments. The Fogelman College of Business and Economics, the College of Education and the Herff College of Engineering have additional college degree requirements.

For information regarding specific degree program requirements and courses available, click on the appropriate links below. Click [here](#) for a complete listing of all degree program contacts including web pages, telephone numbers and e-mail addresses.

## Master

### Accounting - (MS)

#### Master of Science Degree in Accounting

The 30-hour master's program provides students with a corporate governance perspective that emphasizes accounting in a service-oriented economy. Three concentrations within the major are offered: Information Systems and Controls, Business Analysis and Reporting, and Tax Compliance and Planning.

The Master of Science degree requires:

1. Prerequisites (courses indicated [C or better in each course] or their equivalents) of ACCT 2010, Financial Accounting; ACCT 3100, Foundations of Accounting; ACCT 3110, Intermediate Accounting I; ACCT 3120, Intermediate Accounting II; ACCT 3310, Intermediate Managerial Accounting; ACCT 3320, Accounting Analytics I; ACCT 4020 Accounting Systems; ACCT 4521, Individual Tax Compliance/Plan; ACCT 4240, Audit/Assurance Services; and SCMS 3711, Business Analytics.
2. A minimum of 30 semester hours of approved graduate courses. The 30 graduate credits must include at least 21 hours in Accounting, with no more than 9 hours of 6000 level courses.
3. An internship does not count as credit toward the degree but is reported on the transcript.

#### Accounting Core: 12 Required Hours

The 30-hour master's program provides students with a corporate governance perspective that emphasizes accounting in a service-oriented economy. Three concentrations within the major are offered: Information Systems and Controls, Business Analysis and Reporting, and Tax Compliance and Planning.

- ACCT 6211 - Adv Financial & Gov Reporting **Credit Hours: (3)**  
(If the student had earlier passed ACCT 4211, then they must substitute a 3-hour elective approved by the MS in Accounting Advisor.)
- ACCT 7242 - Advanced Auditing \*\* **Credit Hours: (3)**
- ACCT 7521 - Taxation/Bus Entities **Credit Hours: (3)**
- ACCT 7322 - Advanced Managerial Acct \*\* **Credit Hours: (3)**

### Accounting - Business Analysis & Reporting Concentration, (MS)

The 30-hour master's program provides students with a corporate governance perspective that emphasizes accounting in a service-oriented economy. Three concentrations within the major are offered: Information Systems and Controls, Business Analysis and Reporting, and Tax Compliance and Planning.

## Accounting Core: 12 Required Hours

The 30-hour master's program provides students with a corporate governance perspective that emphasizes accounting in a service-oriented economy. Three concentrations within the major are offered: Information Systems and Controls, Business Analysis and Reporting, and Tax Compliance and Planning.

- ACCT 6211 - Adv Financial & Gov Reporting **Credit Hours: (3)**  
(If the student had earlier passed ACCT 4211, then they must substitute a 3-hour elective approved by the MS in Accounting Advisor.)
- ACCT 7242 - Advanced Auditing \*\* **Credit Hours: (3)**
- ACCT 7521 - Taxation/Bus Entities **Credit Hours: (3)**
- ACCT 7322 - Advanced Managerial Acct \*\* **Credit Hours: (3)**

## Electives: 6 Required Hours

- ACCT 7312 - Accounting Data Analytics II **Credit Hours: 3**
- ACCT 7232 - Emerging Attestations **Credit Hours: 3**
- ACCT 7140 - Financial Statement Analysis \*\* **Credit Hours: (3)**
- MIS 7660 - Advanced Data Management **Credit Hours: (3)**

## Accounting - Information Systems & Controls Concentration, (MS)

The 30-hour master's program provides students with a corporate governance perspective that emphasizes accounting in a service-oriented economy. Three concentrations within the major are offered: Information Systems and Controls, Business Analysis and Reporting, and Tax Compliance and Planning.

## Accounting Core: 12 Required Hours

The 30-hour master's program provides students with a corporate governance perspective that emphasizes accounting in a service-oriented economy. Three concentrations within the major are offered: Information Systems and Controls, Business Analysis and Reporting, and Tax Compliance and Planning.

- ACCT 6211 - Adv Financial & Gov Reporting **Credit Hours: (3)**  
(If the student had earlier passed ACCT 4211, then they must substitute a 3-hour elective approved by the MS in Accounting Advisor.)
- ACCT 7242 - Advanced Auditing \*\* **Credit Hours: (3)**
- ACCT 7521 - Taxation/Bus Entities **Credit Hours: (3)**
- ACCT 7322 - Advanced Managerial Acct \*\* **Credit Hours: (3)**

## Electives: 6 Required Hours

## Information Systems & Controls, (MS) 12 Hours

- ACCT 6030 - Systems Assurance/Advisory I **Credit Hours: 3**  
(If the student had earlier passed ACCT 4030, then they must substitute a 3-hour Accounting Elective Approved by the MS-Accounting Advisor.)

- ACCT 7312 - Accounting Data Analytics II **Credit Hours: 3**

### Two Additional Courses chosen from the Below Three:

- MIS 7605 - Bus Database Systems \*\* **Credit Hours: (3)**
- MIS 7620 - Business Machine Learning I \*\* **Credit Hours: (3)**
- MIS 7621 - Business Machine Learning II **Credit Hours: (3)**

## Accounting - Tax Compliance & Planning Concentration, (MS)

### Accounting Core: 12 Required Hours

The 30-hour master's program provides students with a corporate governance perspective that emphasizes accounting in a service-oriented economy. Three concentrations within the major are offered: Information Systems and Controls, Business Analysis and Reporting, and Tax Compliance and Planning.

- ACCT 6211 - Adv Financial & Gov Reporting **Credit Hours: (3)**  
(If the student had earlier passed ACCT 4211, then they must substitute a 3-hour elective approved by the MS in Accounting Advisor.)
- ACCT 7242 - Advanced Auditing \*\* **Credit Hours: (3)**
- ACCT 7521 - Taxation/Bus Entities **Credit Hours: (3)**
- ACCT 7322 - Advanced Managerial Acct \*\* **Credit Hours: (3)**

### Electives: 6 Required Hours

- ACCT 6531 - Personal Tax Advisory **Credit Hours: 3**  
(If the student had earlier passed ACCT 4531, then they must substitute a 3-hour elective approved by the MS in Accounting Advisor.)
- ACCT 7510 - Tax Research & Theory **Credit Hours: (3)**
- ACCT 7511 - Tax- Partnerships/Prtnrs \*\* **Credit Hours: (3)**
- ACCT 7512 - Tax-Corp/Shrhldrs **Credit Hours: (3)**

## Anthropology, (MA)

The Department of Anthropology offers a Master of Arts degree in Anthropology with the purpose of training students as competent practicing anthropologists to understand and address issues of social inequality using anthropological theory and methods.

Focus areas include community development, cultural heritage and identity, museum studies, health and health equity, environmental anthropology, food justice, economic and social behavior, and humanitarianism. Each student will plan his or her program in consultation with his or her major advisor.

A concentration is also available in Medical Anthropology. The concentration in Medical Anthropology involves the application of theories and methods in medical anthropology to better understand and address health disparities, health risks, and healthcare systems.

Program objectives are that students will: (a) demonstrate advanced comprehension of the holistic conceptual, theoretical and methodological foundations of anthropology; (b) enhance and apply critical analysis and independent thought in relation to core constructs, theories, and methods in anthropological works; (c) conceptualize, design, and implement research on significant anthropological problems for building and strengthening community wellbeing and quality of life; (d) enhance written and oral communication of Anthropological themes and topics; and (e) implement professional training and career opportunities in Anthropology through participation in professional activities such as conference presentations, certification, workshops, and related activities. Students must comply with the general requirements of the Graduate School (see Admission Regulations, Academic Regulations, and Minimum Graduate Degree Requirements) as well as the program requirements of the degree being pursued.

## MA Degree Program

### Program Admission

Admission to both the Graduate School and the department is required. To meet departmental requirements for admission, students must submit a letter of intent, writing sample, and three letters of recommendation. In addition to their undergraduate academic record, applicants will be considered on the basis of their recommendation letters, work experience and career plans as described in the letter of intent. Except in exceptional circumstances, students should have a 3.0 undergraduate record.

Admission to the program is not automatic upon meeting minimum departmental admission requirements. Students are selected from the pool of qualified applicants and the number selected depends on the availability of financial aid and adequate faculty supervision. Applications submitted by January 31 will receive greater consideration for funding. Applications received after May 1 will be considered on a case-by-case basis. Applications for the spring semester should be submitted by November 30. Summer school admission must be completed by May 1 for entrance into the Graduate School and the departmental program. Late submissions may, in exceptional circumstances, be considered on an individual basis, but will normally be deferred to the following semester.

### Program Requirements

1. A total of 30 semester hours course-work plus satisfactory performance in a practicum (ANTH 7985—6 hours credit).
2. Satisfactory completion of the core curriculum (12 hours).
  1. ANTH 7075 Methods In Anthropology
  2. ANTH 7076 Anthropology Writing/Analysis
  3. ANTH 7200 Roots of Anth Theory
  4. ANTH 7255 Applying Anthropology
3. For students in the Medical Anthropology concentration, satisfactory completion of concentration-specific requirements (6 hours).
  1. ANTH 7511 - Critically-Applied Medical Anthropology
  2. ANTH 7521 - Biocultural Epidemiology
4. At least 70% of the program (i.e. 26 hours) must be taken at the 7000 level.
5. The Master's Degree in Anthropology is an interdisciplinary degree and students are encouraged to take up to 9 semester hours of their work outside of the Department of Anthropology, depending upon their area of interest and the nature of previous work experience.

## Architecture, (MArch)

The first professional Master of Architecture degree is for individuals with a pre-professional degree in architecture or equivalent program of study. The professional curriculum comprises the four-year Bachelor of Fine Arts in Architecture and the two-year Master of Architecture degrees. The post-professional Master of Architecture degree is for individuals already holding a professional degree in architecture who are interested in pursuing opportunities for research, teaching, and independent studies.

In the United States, most 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 professional degree programs in architecture offered by institutions with U.S. regional accreditation, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted an eight-year term, an eight-year term with conditions, or a two-year term of continuing accreditation, or a three-year term of initial accreditation, depending on the extent of its conformance with established education standards. Doctor of Architecture and Master of Architecture degree programs may require a non-accredited undergraduate degree in architecture for admission. However, the non-accredited degree is not, by itself, recognized as an accredited degree.

The University of Memphis, Department of Architecture, offers the following NAAB-accredited degree program:

M.Arch. (pre-professional degree + 60 graduate credits)

Next accreditation visit: 2024

The Department of Architecture is a member of the Association of Collegiate Schools of Architecture.

**Program Objectives:** The program of study for the Master of Architecture encompasses both the art and the science of design and is structured to engage students in the processes and professional standards of architecture and design. Through a series of professional core and elective courses, students (1) become competent in a range of intellectual, spatial, technical, and interpersonal skills; (2) understand the historical, socio-cultural, and environmental context of architecture; (3) are able to solve architectural design problems, including the integration of technical systems and health and safety requirements; and (4) comprehend the roles and responsibilities of the architect in society. The culturally diverse Memphis and Mid-South region serves as an urban and non-urban issues laboratory.

All graduate students must comply with the general requirements of the Graduate School (see Admission Regulations, Academic Regulations, and Minimum Degree Requirements) as well as the program requirements of the degree being pursued.

**Evaluation of Credentials:** Applicants whose highest degree is from a foreign university must have their credentials evaluated. The university will accept evaluations done by any credentialing agency listed on the National Association of Credential Evaluation Services web site ([www.naces.org](http://www.naces.org)). A course by course report is required.

## Program Admission

In addition to application to the Graduate School, all persons making application to the MArch degree program must submit the following materials directly to the Department of Architecture:

1. **Portfolio:** Applicant portfolios are reviewed for demonstration of aesthetic judgment, basic design ability, visual investigation skills, and abilities in architectural design, including identification of building elements and an understanding of their assembly, integration of building systems, a knowledge of building structure, and other evidence of understanding and abilities conforming to NAAB performance criteria.
2. **Letters of Recommendation:** Three letters of recommendation are required.
3. **Statement of Intent:** Applicants must submit a two-page essay describing professional background, objectives, and motivation for pursuing graduate study in Architecture. This brief statement should reflect an individual interest in this graduate program and provide some indication of professional goals or intentions.

All admission documents and portfolio must be received by 15 March for fall admission. Students who, in the judgment of the faculty, have adequate preparation may be given advanced standing.

## Program Prerequisites

1. Persons making application to the first professional MArch degree program must have completed an approved pre-professional undergraduate degree in Architecture, Environmental Design, or the equivalent.
  1. In assessing the pre-professional degree, the following course content or evidence of equivalent experience is required. Otherwise, the appropriate courses must be taken at the undergraduate level:

1. Architectural Graphics (both technical and freehand drawing), 6 semester hours
  2. Architectural History (ancient through modern), 6 semester hours
  3. Structural Design Principles (statics; strength of materials; gravity and lateral load tracing; design in timber, steel, concrete), 6 semester hours
  4. Building Materials and Assembly (light construction), 3 semester hours
  5. Environmental Systems (heat, light, sound, human comfort), 3 semester hours
  6. Architectural Design Studio (in addition to "design fundamentals" courses), 20 semester hours
2. Where slight deficiencies in preparation exist, applicants may be admitted with the stipulation that they complete additional design studio or supporting courses. These may not count toward the required graduate plan of study.
2. Persons making application to the post-professional MArch degree program must have completed a NAAB-accredited professional undergraduate degree in architecture. The Architecture Program director may approve a maximum of 30 semester hours in architecture course work from the professional degree. Registration as an architect in the United States may be substituted for the professional degree.

## Program Requirements

1. A minimum of 60 semester hours, including 6 hours of design-research studio, thesis studio, or professional project studio.
2. A total of 36 semester hours of Architecture core courses, consisting of 18 semester hours of advanced architectural design studios (ARCH 7711, ARCH 7712, ARCH 7713), 9 semester hours of architectural seminars (ARCH 7011, ARCH 7012, ARCH 7013), and 9 semester hours of architectural theory and advanced professional and technical courses (ARCH 7211, ARCH 7421, ARCH 7431)
3. A minimum of 3 semester hours of Architecture Research (ARCH 7930) and 6 semester hours of Architecture Design-Research Studio (ARCH 7994) or Professional Project Studio (ARCH 7995). The design-research project, thesis, or professional project must be approved by a faculty committee. Students pursuing the thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.
4. Students receiving assistantships are required to take a minimum of 12 credit hours per semester.

## Transfer of Credits

The Architecture program director may recommend to the Graduate School acceptance of no more than 12 semester hours of credit for architecture course work successfully completed at another institution. For students formerly enrolled in programs accredited by the National Architectural Accrediting Board, a maximum of 30 semester hours in architecture course work may be approved.

## Art - Ceramics Concentration, (MFA)

### MFA Degree Program

Program objectives are: (1) professional studio competence as exemplified by a significant body of work; (2) professional competence in the dissemination of knowledge, including logical and clear written and verbal expression of ideas in teaching contexts; and (3) development of skills for critical and analytical reasoning as a practicing art professional.

### Program Admission

1. Portfolio: Approval by the area graduate committee of the applicant's creative work as specified below:
  1. Graphic Design: 20-30 images in a powerpoint presentation, of original and/or printed works. Submission of original work may be requested.

2. Ceramics, Painting, Printmaking/ Photography, and Sculpture: 20-30 images in a powerpoint presentation, of work mainly in the applicant's concentration area plus some slides of drawings and optional other media. Include additional views of 3D pieces. Submission of original work might be requested.
2. Letters of recommendation: Letters from two persons familiar with the applicant's creative activity but who are not members of the area graduate committee. If applying for a teaching assistantship, each recommendation should contain reference to the applicant's teaching ability. Graphic design applicants are required to submit two letters of reference.
3. Statement: A brief, personal statement of professional ambitions, intended concentration area, other special creative interests, and outline of previous professional experience. Please include current and permanent e-mail address, mailing address, and phone numbers.
4. Deadline: All University and Department of Art MFA application materials are due November 1 for Spring admission and February 15 for Fall admission and assistantship consideration.
5. Address: Send images, work, letters of recommendation, and statement to:  
Coordinator of Graduate Studies  
Department of Art  
The University of Memphis  
Memphis, Tennessee 38152
6. Deficiencies: Students may be admitted but required to complete undergraduate prerequisites or otherwise correct deficiencies.
7. Students with assistantships are required to take 9 hours each semester, 3 of which may be chosen from ART 7880 or 7881. Eligibility for assistantships is based on students receiving a positive graduate review.

## Program Prerequisites

1. Previous education and experience: Normally admission to the graduate program will require an undergraduate major in the applicant's concentration area. (See concentration areas listed above.) A baccalaureate degree from an accredited institution is required with not less than 70 semester hours of art, of which 12 hours should be in art history and 18 hours (24 hours for Graphic Design) must be in the concentration studio courses. Exceptions to the above requirements will be considered, however, when the portfolio and professional experience warrant it.
2. Transfer credit: Any applicant who holds an MA degree in studio art from another institution may transfer up to a maximum of 15 semester hours credit in art earned for that degree to apply toward the MFA degree.

## Prerequisites for Admission to Degree Candidacy

The student shall apply for admission to degree candidacy during the semester in which the student completes 30 hours of graduate work. To be approved for admission to candidacy, the student shall have:

1. A grade point average of at least 3.0 on a 4.0 scale,
2. Removed all departmental prerequisite requirements,
3. A planned degree program that meets all departmental and graduate school requirements, and
4. Established an overall history of satisfactory ratings in periodic review (a semi-annual evaluation of each student's general level of achievement by a committee of area graduate faculty) and be approved for candidacy by that committee.

## Program Requirements

1. A total of 60 semester hours, including a thesis of 6 semester hours in the student's area of concentration.
2. A total of 36 semester hours of studio art, excluding the thesis, with a minimum of 24 semester hours in the student's area of concentration.
3. Forty-two semester hours of 7000 level courses.
4. A total of 9 semester hours in art history.
5. A total of 9 semester hours of electives.



6. Students with a concentration in graphic design are required to take at least 12 semester hours of ART 7040 and ART 7240 combined.
7. Residency requirement for Graphic Design: The student must commit to full-time study for a minimum of two successive semesters after admission to concentration to fulfill the residency requirement.
8. Students from the concentrations of Ceramics, Painting, Photography, Printmaking, and/or Sculpture must enroll in ART 7651 (1 hour) when also enrolled in a 6000 or 7000 level studio course.
9. Satisfactory grade on a written comprehensive examination, with follow-up oral examination at option of examining committee.
10. Thesis (exhibition) to be approved by a faculty committee with the member under whom the thesis was prepared as chair. For graphic design candidates, a written thesis accompanied by appropriate visual documentation is required.

## Art - Graphic Design Concentration, (MFA)

### MFA Degree Program

Program objectives are: (1) professional studio competence as exemplified by a significant body of work; (2) professional competence in the dissemination of knowledge, including logical and clear written and verbal expression of ideas in teaching contexts; and (3) development of skills for critical and analytical reasoning as a practicing art professional.

### Program Admission

1. Portfolio: Approval by the area graduate committee of the applicant's creative work as specified below:
  1. Graphic Design: 20-30 images in a powerpoint presentation, of original and/or printed works. Submission of original work may be requested.
  2. Ceramics, Painting, Printmaking/ Photography, and Sculpture: 20-30 images in a powerpoint presentation, of work mainly in the applicant's concentration area plus some slides of drawings and optional other media. Include additional views of 3D pieces. Submission of original work might be requested.
2. Letters of recommendation: Letters from two persons familiar with the applicant's creative activity but who are not members of the area graduate committee. If applying for a teaching assistantship, each recommendation should contain reference to the applicant's teaching ability. Graphic design applicants are required to submit two letters of reference.
3. Statement: A brief, personal statement of professional ambitions, intended concentration area, other special creative interests, and outline of previous professional experience. Please include current and permanent e-mail address, mailing address, and phone numbers.
4. Deadline: All University and Department of Art MFA application materials are due November 1 for Spring admission and February 15 for Fall admission and assistantship consideration.
5. Address: Send images, work, letters of recommendation, and statement to:
 

Coordinator of Graduate Studies  
Department of Art  
The University of Memphis  
Memphis, Tennessee 38152
6. Deficiencies: Students may be admitted but required to complete undergraduate prerequisites or otherwise correct deficiencies.
7. Students with assistantships are required to take 9 hours each semester, 3 of which may be chosen from ART 7880 or 7881. Eligibility for assistantships is based on students receiving a positive graduate review.

### Program Prerequisites

1. Previous education and experience: Normally admission to the graduate program will require an undergraduate major in the applicant's concentration area. (See concentration areas listed above.) A baccalaureate degree from an accredited institution is required with not less than 70 semester hours of art, of which 12 hours should be in art history and 18

hours (24 hours for Graphic Design) must be in the concentration studio courses. Exceptions to the above requirements will be considered, however, when the portfolio and professional experience warrant it.

2. Transfer credit: Any applicant who holds an MA degree in studio art from another institution may transfer up to a maximum of 15 semester hours credit in art earned for that degree to apply toward the MFA degree.

## Prerequisites for Admission to Degree Candidacy

The student shall apply for admission to degree candidacy during the semester in which the student completes 30 hours of graduate work. To be approved for admission to candidacy, the student shall have:

1. A grade point average of at least 3.0 on a 4.0 scale,
2. Removed all departmental prerequisite requirements,
3. A planned degree program that meets all departmental and graduate school requirements, and
4. Established an overall history of satisfactory ratings in periodic review (a semi-annual evaluation of each student's general level of achievement by a committee of area graduate faculty) and be approved for candidacy by that committee.

## Program Requirements

1. A total of 60 semester hours, including a thesis of 6 semester hours in the student's area of concentration.
2. A total of 36 semester hours of studio art, excluding the thesis, with a minimum of 24 semester hours in the student's area of concentration.
3. Forty-two semester hours of 7000 level courses.
4. A total of 9 semester hours in art history.
5. A total of 9 semester hours of electives.
6. Students with a concentration in graphic design are required to take at least 12 semester hours of ART 7040 and ART 7240 combined.
7. Residency requirement for Graphic Design: The student must commit to full-time study for a minimum of two successive semesters after admission to concentration to fulfill the residency requirement.
8. Students from the concentrations of Ceramics, Painting, Photography, Printmaking, and/or Sculpture must enroll in ART 7651 (1 hour) when also enrolled in a 6000 or 7000 level studio course.
9. Satisfactory grade on a written comprehensive examination, with follow-up oral examination at option of examining committee.
10. Thesis (exhibition) to be approved by a faculty committee with the member under whom the thesis was prepared as chair. For graphic design candidates, a written thesis accompanied by appropriate visual documentation is required.

## Art - Painting Concentration, (MFA)

### MFA Degree Program

Program objectives are: (1) professional studio competence as exemplified by a significant body of work; (2) professional competence in the dissemination of knowledge, including logical and clear written and verbal expression of ideas in teaching contexts; and (3) development of skills for critical and analytical reasoning as a practicing art professional.

### Program Admission

1. Portfolio: Approval by the area graduate committee of the applicant's creative work as specified below:
  1. Graphic Design: 20-30 images in a powerpoint presentation, of original and/or printed works. Submission of original work may be requested.

2. Ceramics, Painting, Printmaking/ Photography, and Sculpture: 20-30 images in a powerpoint presentation, of work mainly in the applicant's concentration area plus some slides of drawings and optional other media. Include additional views of 3D pieces. Submission of original work might be requested.
2. Letters of recommendation: Letters from two persons familiar with the applicant's creative activity but who are not members of the area graduate committee. If applying for a teaching assistantship, each recommendation should contain reference to the applicant's teaching ability. Graphic design applicants are required to submit two letters of reference.
3. Statement: A brief, personal statement of professional ambitions, intended concentration area, other special creative interests, and outline of previous professional experience. Please include current and permanent e-mail address, mailing address, and phone numbers.
4. Deadline: All University and Department of Art MFA application materials are due November 1 for Spring admission and February 15 for Fall admission and assistantship consideration.
5. Address: Send images, work, letters of recommendation, and statement to:  
Coordinator of Graduate Studies  
Department of Art  
The University of Memphis  
Memphis, Tennessee 38152
6. Deficiencies: Students may be admitted but required to complete undergraduate prerequisites or otherwise correct deficiencies.
7. Students with assistantships are required to take 9 hours each semester, 3 of which may be chosen from ART 7880 or 7881. Eligibility for assistantships is based on students receiving a positive graduate review.

## Program Prerequisites

1. Previous education and experience: Normally admission to the graduate program will require an undergraduate major in the applicant's concentration area. (See concentration areas listed above.) A baccalaureate degree from an accredited institution is required with not less than 70 semester hours of art, of which 12 hours should be in art history and 18 hours (24 hours for Graphic Design) must be in the concentration studio courses. Exceptions to the above requirements will be considered, however, when the portfolio and professional experience warrant it.
2. Transfer credit: Any applicant who holds an MA degree in studio art from another institution may transfer up to a maximum of 15 semester hours credit in art earned for that degree to apply toward the MFA degree.

## Prerequisites for Admission to Degree Candidacy

The student shall apply for admission to degree candidacy during the semester in which the student completes 30 hours of graduate work. To be approved for admission to candidacy, the student shall have:

1. A grade point average of at least 3.0 on a 4.0 scale,
2. Removed all departmental prerequisite requirements,
3. A planned degree program that meets all departmental and graduate school requirements, and
4. Established an overall history of satisfactory ratings in periodic review (a semi-annual evaluation of each student's general level of achievement by a committee of area graduate faculty) and be approved for candidacy by that committee.

## Program Requirements

1. A total of 60 semester hours, including a thesis of 6 semester hours in the student's area of concentration.
2. A total of 36 semester hours of studio art, excluding the thesis, with a minimum of 24 semester hours in the student's area of concentration.
3. Forty-two semester hours of 7000 level courses.
4. A total of 9 semester hours in art history.
5. A total of 9 semester hours of electives.

6. Students with a concentration in graphic design are required to take at least 12 semester hours of ART 7040 and ART 7240 combined.
7. Residency requirement for Graphic Design: The student must commit to full-time study for a minimum of two successive semesters after admission to concentration to fulfill the residency requirement.
8. Students from the concentrations of Ceramics, Painting, Photography, Printmaking, and/or Sculpture must enroll in ART 7651 (1 hour) when also enrolled in a 6000 or 7000 level studio course.
9. Satisfactory grade on a written comprehensive examination, with follow-up oral examination at option of examining committee.
10. Thesis (exhibition) to be approved by a faculty committee with the member under whom the thesis was prepared as chair. For graphic design candidates, a written thesis accompanied by appropriate visual documentation is required.

## **Art - Printmaking/Photography Concentration, (MFA)**

### **MFA Degree Program**

Program objectives are: (1) professional studio competence as exemplified by a significant body of work; (2) professional competence in the dissemination of knowledge, including logical and clear written and verbal expression of ideas in teaching contexts; and (3) development of skills for critical and analytical reasoning as a practicing art professional.

### **Program Admission**

1. Portfolio: Approval by the area graduate committee of the applicant's creative work as specified below:
  1. Graphic Design: 20-30 images in a powerpoint presentation, of original and/or printed works. Submission of original work may be requested.
  2. Ceramics, Painting, Printmaking/ Photography, and Sculpture: 20-30 images in a powerpoint presentation, of work mainly in the applicant's concentration area plus some slides of drawings and optional other media. Include additional views of 3D pieces. Submission of original work might be requested.
2. Letters of recommendation: Letters from two persons familiar with the applicant's creative activity but who are not members of the area graduate committee. If applying for a teaching assistantship, each recommendation should contain reference to the applicant's teaching ability. Graphic design applicants are required to submit two letters of reference.
3. Statement: A brief, personal statement of professional ambitions, intended concentration area, other special creative interests, and outline of previous professional experience. Please include current and permanent e-mail address, mailing address, and phone numbers.
4. Deadline: All University and Department of Art MFA application materials are due November 1 for Spring admission and February 15 for Fall admission and assistantship consideration.
5. Address: Send images, work, letters of recommendation, and statement to:
 

Coordinator of Graduate Studies  
Department of Art  
The University of Memphis  
Memphis, Tennessee 38152
6. Deficiencies: Students may be admitted but required to complete undergraduate prerequisites or otherwise correct deficiencies.
7. Students with assistantships are required to take 9 hours each semester, 3 of which may be chosen from ART 7880 or 7881. Eligibility for assistantships is based on students receiving a positive graduate review.

### **Program Prerequisites**

1. Previous education and experience: Normally admission to the graduate program will require an undergraduate major in the applicant's concentration area. (See concentration areas listed above.) A baccalaureate degree from an accredited institution is required with not less than 70 semester hours of art, of which 12 hours should be in art history and 18

hours (24 hours for Graphic Design) must be in the concentration studio courses. Exceptions to the above requirements will be considered, however, when the portfolio and professional experience warrant it.

2. Transfer credit: Any applicant who holds an MA degree in studio art from another institution may transfer up to a maximum of 15 semester hours credit in art earned for that degree to apply toward the MFA degree.

## Prerequisites for Admission to Degree Candidacy

The student shall apply for admission to degree candidacy during the semester in which the student completes 30 hours of graduate work. To be approved for admission to candidacy, the student shall have:

1. A grade point average of at least 3.0 on a 4.0 scale,
2. Removed all departmental prerequisite requirements,
3. A planned degree program that meets all departmental and graduate school requirements, and
4. Established an overall history of satisfactory ratings in periodic review (a semi-annual evaluation of each student's general level of achievement by a committee of area graduate faculty) and be approved for candidacy by that committee.

## Program Requirements

1. A total of 60 semester hours, including a thesis of 6 semester hours in the student's area of concentration.
2. A total of 36 semester hours of studio art, excluding the thesis, with a minimum of 24 semester hours in the student's area of concentration.
3. Forty-two semester hours of 7000 level courses.
4. A total of 9 semester hours in art history.
5. A total of 9 semester hours of electives.
6. Students with a concentration in graphic design are required to take at least 12 semester hours of ART 7040 and ART 7240 combined.
7. Residency requirement for Graphic Design: The student must commit to full-time study for a minimum of two successive semesters after admission to concentration to fulfill the residency requirement.
8. Students from the concentrations of Ceramics, Painting, Photography, Printmaking, and/or Sculpture must enroll in ART 7651 (1 hour) when also enrolled in a 6000 or 7000 level studio course.
9. Satisfactory grade on a written comprehensive examination, with follow-up oral examination at option of examining committee.
10. Thesis (exhibition) to be approved by a faculty committee with the member under whom the thesis was prepared as chair. For graphic design candidates, a written thesis accompanied by appropriate visual documentation is required.

## Art - Sculpture Concentration, (MFA)

### MFA Degree Program

Program objectives are: (1) professional studio competence as exemplified by a significant body of work; (2) professional competence in the dissemination of knowledge, including logical and clear written and verbal expression of ideas in teaching contexts; and (3) development of skills for critical and analytical reasoning as a practicing art professional.

### Program Admission

1. Portfolio: Approval by the area graduate committee of the applicant's creative work as specified below:
  1. Graphic Design: 20-30 images in a powerpoint presentation, of original and/or printed works. Submission of original work may be requested.

2. Ceramics, Painting, Printmaking/ Photography, and Sculpture: 20-30 images in a powerpoint presentation, of work mainly in the applicant's concentration area plus some slides of drawings and optional other media. Include additional views of 3D pieces. Submission of original work might be requested.
2. Letters of recommendation: Letters from two persons familiar with the applicant's creative activity but who are not members of the area graduate committee. If applying for a teaching assistantship, each recommendation should contain reference to the applicant's teaching ability. Graphic design applicants are required to submit two letters of reference.
3. Statement: A brief, personal statement of professional ambitions, intended concentration area, other special creative interests, and outline of previous professional experience. Please include current and permanent e-mail address, mailing address, and phone numbers.
4. Deadline: All University and Department of Art MFA application materials are due November 1 for Spring admission and February 15 for Fall admission and assistantship consideration.
5. Address: Send images, work, letters of recommendation, and statement to:  
Coordinator of Graduate Studies  
Department of Art  
The University of Memphis  
Memphis, Tennessee 38152
6. Deficiencies: Students may be admitted but required to complete undergraduate prerequisites or otherwise correct deficiencies.
7. Students with assistantships are required to take 9 hours each semester, 3 of which may be chosen from ART 7880 or 7881. Eligibility for assistantships is based on students receiving a positive graduate review.

## Program Prerequisites

1. Previous education and experience: Normally admission to the graduate program will require an undergraduate major in the applicant's concentration area. (See concentration areas listed above.) A baccalaureate degree from an accredited institution is required with not less than 70 semester hours of art, of which 12 hours should be in art history and 18 hours (24 hours for Graphic Design) must be in the concentration studio courses. Exceptions to the above requirements will be considered, however, when the portfolio and professional experience warrant it.
2. Transfer credit: Any applicant who holds an MA degree in studio art from another institution may transfer up to a maximum of 15 semester hours credit in art earned for that degree to apply toward the MFA degree.

## Prerequisites for Admission to Degree Candidacy

The student shall apply for admission to degree candidacy during the semester in which the student completes 30 hours of graduate work. To be approved for admission to candidacy, the student shall have:

1. A grade point average of at least 3.0 on a 4.0 scale,
2. Removed all departmental prerequisite requirements,
3. A planned degree program that meets all departmental and graduate school requirements, and
4. Established an overall history of satisfactory ratings in periodic review (a semi-annual evaluation of each student's general level of achievement by a committee of area graduate faculty) and be approved for candidacy by that committee.

## Program Requirements

1. A total of 60 semester hours, including a thesis of 6 semester hours in the student's area of concentration.
2. A total of 36 semester hours of studio art, excluding the thesis, with a minimum of 24 semester hours in the student's area of concentration.
3. Forty-two semester hours of 7000 level courses.
4. A total of 9 semester hours in art history.
5. A total of 9 semester hours of electives.

6. Students with a concentration in graphic design are required to take at least 12 semester hours of ART 7040 and ART 7240 combined.
7. Residency requirement for Graphic Design: The student must commit to full-time study for a minimum of two successive semesters after admission to concentration to fulfill the residency requirement.
8. Students from the concentrations of Ceramics, Painting, Photography, Printmaking, and/or Sculpture must enroll in ART 7651 (1 hour) when also enrolled in a 6000 or 7000 level studio course.
9. Satisfactory grade on a written comprehensive examination, with follow-up oral examination at option of examining committee.
10. Thesis (exhibition) to be approved by a faculty committee with the member under whom the thesis was prepared as chair. For graphic design candidates, a written thesis accompanied by appropriate visual documentation is required.

## Art Education (K-12) Licensure, (MAT)

### MAT Program Admission

Applicants must complete admissions requirements to be admitted. **All admissions requirements must be met prior to being admitted into the MAT program.** MAT admission requirements are designed to be both competitive and selective, to be knowledge and performance-based, to be clear and consistent, to maintain diversity, and to meet or exceed undergraduate requirements and minimum state requirements.

To be admitted to the MAT program a candidate must complete an application through the Office of Graduate Admissions which includes an official transcript reflecting an earned bachelor's degree with a 2.75 or higher grade point average from an accredited institution. Applicants with a successful professional career may appeal this grade point average requirement. Documentation of a "successful professional career" is necessary and may include, but is not limited to, items such as an administrators' letter of recommendation, teacher evaluations, lesson plans, teaching video, etc.

### Teacher Education Program (TEP) Admission

1. Students who plan to pursue a graduate program of studies leading to teacher licensure must submit a formal application to the College of Education Teacher Education Program (TEP). Students are encouraged to apply for admission into TEP as soon as they enroll in any College of Education courses.
2. TEP admissions deadlines are September 15 for fall and January 31 for spring.
3. Requirements for provisional admission into TEP include:
  1. A grade point average of 3.25 at the graduate level and undergraduate grade point average of 3.0 or higher;
  2. Pass all sections of the CORE Academic Skills for Educators;
  3. Pass the Praxis II Content Knowledge Exam required by the State of Tennessee for the licensure area being pursued.
  4. TBI Background Check
  5. Completion of teacher aptitude survey
4. Requirements for full admission to TEP must be completed prior to the Clinical Teaching Semester and/or the semester candidates enroll in ICL 7993. They include:
  1. 3.25 graduate grade point average
  2. Passed Praxis II licensure exams

Passing scores on all required Praxis II Licensure Exams for Licensure and Graduation: Candidates participating in the Clinical Teaching Semester and/or ICL 7993 must submit a successful Teacher Performance Assessment (edTPA). Candidates who seek a Practitioner License must have a composite of 3.0 on the Teacher Evaluation used in their employing district.

Students must be provisionally admitted to the Teacher Education Program (TEP) before completing all Level I courses and starting Level II courses. (Level I Professional Core courses provide requisite foundations for teaching and should be completed before taking Level II Professional Specialization courses that focus on specialized strategies for teaching and learning in educational environments).

Students who do not apply to TEP or fail to maintain criteria during the program will not be allowed to continue in the program.

NOTE: MAT admission, TEP admission, and Graduate School admission are separate procedures.

## Program Requirements

Students seeking licensure and the MAT degree must take a minimum of 30-46 graduate semester hours, depending on program and licensure area. Minimum hours may increase depending on licensure requirements. Students who are employed by a school district on a Practitioner License may have the Level III (clinical teaching semester) waived if they provide the necessary documentation to verify one year of successful teaching experience in their area of licensure with a composite Teacher Evaluation Score of 3.0 or higher. Students in this category should contact the Teacher Education Office in 202 Ball Hall for specific requirements. Please note that all initial licensure candidates, including candidates who on a Job-Embedded Practitioners License, must take ICL 7993, either along with clinical teaching semester or the last semester before applying for license if working on a Practitioner License. This course serves as the culminating experience and will require successful completion of the Teacher Performance Assessment (edTPA) to be able to be recommended for licensure.

## Art Education (K-12) Concentration Requirements

- ART 7421 - Positive Yth Devlp thru Arts **Credit Hours: (3)**
- ART 7411 - Methods for Elem Art **Credit Hours: (3)**
- ART 7423 - Methods Art Second Schools **Credit Hours: (3)**

## Art History - African American - African Diaspora Art Histories, (MA)

### MA Degree Program

Program objectives are to equip students with knowledge in a specific field of art and visual culture; to foster critical analysis of the major theories and documents of art history as a practical tool for individual research; to provide field opportunities through museum internships or archaeological excavations; and to develop strategies for the presentation of research in a clear and persuasive manner.

### Program Admission

1. For Fall semester admission with assistantship, completed materials must be received at the University by February 15. Applications received after April 1 cannot be guaranteed consideration for the Fall semester. For Spring semester admission, the deadline is November 1.
2. For the concentrations in African American - African Diaspora Art Histories, an undergraduate course in each of the major areas of art history is desirable: American, ancient, medieval, renaissance, baroque, and modern. If, after evaluation of the student's transcript, the art history faculty perceives a deficiency in these areas, the student may be required to successfully complete courses that will not count toward the Master of Arts degree.
3. A letter of intent, explaining the applicant's motivation and objectives in pursuing a graduate degree in art history.
4. A sample of undergraduate writing, preferably in art history.
5. Two letters of recommendation, at least one of which should be from a college faculty member who knows the student well.

### Note:

Applications forms for assistantships are also available from the Department of Art.



## Prerequisites for Admission to Degree Candidacy

The student shall apply for admission to degree candidacy upon the completion of 18 semester hours of graduate work. All candidacy requirements listed below must be satisfied before registering for more than 18 hours of coursework at the graduate level. To be approved for admission for candidacy, the student shall have:

1. A grade point average of at least 3.0 on a 4.0 scale.
2. Fulfilled all departmental prerequisite requirements.
3. A planned degree program that meets all departmental and graduate school requirements. Pass Qualifying Examinations
4. Pass Qualifying Examinations
  - Foreign language translation exam: The language is usually French, German, Italian or another research language appropriate to the student's field of study, to be approved by the Graduate Academic Advisor. The exam will consist of a 300-500 word passage chosen by a faculty member and must be translated within a two-hour period. Two additional attempts are allowed.
  - Image Identification Exam: For the concentration in African American - African Diaspora Art Histories, the examination covers works of art and visual culture from various regions and time periods, ancient to modern. Two additional attempts are allowed.
5. The student must establish a history of satisfactory ratings in periodic review, a semi-annual evaluation of each student's general level of achievement by all area graduate faculty. Two unsatisfactory ratings will result in dismissal from the program.

## Program Requirements

1. A total of 30 semester hours for the concentration in African American - African Diaspora Art Histories.
2. The completion of ARTH 6166 and ARTH 7130.

### African American - African Diaspora Art Histories:

**6 semester hours at the 6000-level including:**

- ARTH 6183 - Visual Arts Of Africa **Credit Hours: (3)**  
AND
- ARTH 6185 - African American Art **Credit Hours: (3)**

**12 semester hours selected from::**

- ARTH 7000 - Semn Art/Vis Cult Afr/Afr Dias **Credit Hours: (3)** (may be repeated)
- ARTH 7140 - Grad Prob Renaissance **Credit Hours: (3)**
- ARTH 7150 - Grad Prob 19th Century **Credit Hours: (3)**
- ARTH 7165 - Gr Prob Am Art Anc/Mod **Credit Hours: (3)** (may be repeated)
- ARTH 7996 - Thesis **Credit Hours: (1-6)**

**6 semester hours of elective credit outside the field of art history**

May be selected with the permission of the advisor.

## Note:

Students should consult with their academic advisor as to the required and recommended courses appropriate to their area of concentration.

## Other Requirements

1. Twenty-one semester hours of 7000 level courses, including no more than 3 credit hours for the thesis option (see below).
2. Satisfactory completion of the qualifying examinations
3. Either a completed thesis and successful oral defense or a comprehensive examination and successful oral defense. NOTE: Students who elect to complete a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning the writing process. Students who elect to take a comprehensive examination should make arrangements with their degree advisor and major area professors before their final semester, in order to prepare suitable exam questions or writing assignments for their examination and defense.
4. Graduate Assistantships. Students with assistantships are required to take 9 hours each semester. Assistantships are renewed based on the following:
  1. Students must attain the required 3.0 grade point average and maintain a good record in their assistantship work assignments.
  2. Students must make satisfactory progress toward the degree. In order to maintain satisfactory progress toward the degree during the first two semesters of study, the student must:
    1. pass the qualifying exam administered by the concentration, and
    2. take the foreign language translation exam.
5. Students who fail to successfully complete these examinations by May 1 of the Spring semester will not receive a high priority for assistantship renewal for a third semester of study.

## **Art History - African American and African Diaspora Art Histories Concentration with Museum Studies Certificate (MA)**

### MA Degree Program

Program objectives are to equip students with knowledge in a specific field of art and visual culture; to foster critical analysis of the major theories and documents of art history as a practical tool for individual research; to provide field opportunities through museum internships or archaeological excavations; and to develop strategies for the presentation of research in a clear and persuasive manner.

### Program Admission

1. For Fall semester admission with assistantship, completed materials must be received at the University by February 15. Applications received after April 1 cannot be guaranteed consideration for the Fall semester. For Spring semester admission, the deadline is November 1.
2. For the concentration in African American – African Diaspora Art Histories, an undergraduate course in each of the major areas of art history is desirable: American, ancient, medieval, renaissance, baroque, and modern. If after evaluation of the student's transcript, the art history faculty perceives a deficiency in these areas, the student may be required to successfully complete courses that will not count toward the Master of Arts degree.
3. A letter of intent, explaining the applicant's motivation and objectives in pursuing a graduate degree in art history.
4. A sample of undergraduate writing, preferably in art history.

5. Two letters of recommendation, at least one of which should be from a college faculty member who knows the student well.

## Note:

Applications forms for assistantships are also available from the Department of Art.

## Prerequisites for Admission to Degree Candidacy

The student shall apply for admission to degree candidacy upon the completion of 18 semester hours of graduate work. All candidacy requirements listed below must be satisfied before registering for more than 18 hours of coursework at the graduate level. To be approved for admission for candidacy, the student shall have:

1. A grade point average of at least 3.0 on a 4.0 scale.
2. Fulfilled all departmental prerequisite requirements.
3. A planned degree program that meets all departmental and graduate school requirements.
4. Pass Qualifying Examinations
  - Foreign language translation exam: The language is usually French, German, Italian or another research language appropriate to the student's field of study, to be approved by the Graduate Academic Advisor. The exam will consist of a 300-500 word passage chosen by a faculty member and must be translated within a two-hour period. Two additional attempts are allowed.
  - Image Identification Exam: For the concentration in African American -African Diaspora Art Histories with Museum Studies Certificate, the examination covers works of art and visual culture from various regions and time periods, ancient to modern. Two additional attempts are allowed.
5. The student must establish a history of satisfactory ratings in periodic review, a semi-annual evaluation of each student's general level of achievement by all area graduate faculty. Two unsatisfactory ratings will result in dismissal from the program.

## Program Requirements

1. The total semester hours vary from 30 to 33 depending on the concentration.
2. The completion of ARTH 6123 or ARTH 6166 and ARTH 7130.

## African American and African Diaspora Art Histories with Museum Studies Certificate:

- ARTH 6183 - Visual Arts Of Africa **Credit Hours: (3)**
- ARTH 6185 - African American Art **Credit Hours: (3)**

### 6 semester hours

- ARTH 6183 - Visual Arts Of Africa **Credit Hours: (3)**
- ARTH 6185 - African American Art **Credit Hours: (3)**

### 6 semester hours from

- ARTH 7000 - Semn Art/Vis Cult Afr/Afr Dias **Credit Hours: (3)**

- ARTH 7140 - Grad Prob Renaissance **Credit Hours: (3)**
- ARTH 7150 - Grad Prob 19th Century **Credit Hours: (3)**
- ARTH 7152 - Grad Prob 20th Century **Credit Hours: (3)**
- ARTH 7165 - Gr Prob Am Art Anc/Mod **Credit Hours: (3)**
- ARTH 7996 - Thesis **Credit Hours: (1-6)**

## Students enrolled in any seminars

Students enrolled in any seminars other than ARTH 7000 must conduct research dealing with the African Diaspora In the Western World:

### 6 semester hours from

- ARTH 7661 - Museum Practices \*\* **Credit Hours: (3)**
- ARTH 7662 - Museums & Communities \*\* **Credit Hours: (3)**

### 6 semester hours of

- ARTH 7669 - Museum Internship \*\* **Credit Hours: (3-6)**
- ARTH 6166 - American Art: 1500s-1940s **Credit Hours: (3)** is required

## Note:

Students should consult with their academic advisor as to the required and recommended courses appropriate to their area of concentration.

## Other Requirements

1. Twenty-one semester hours of 7000 level courses, including no more than 3 credit hours for the thesis option (see below).
2. Satisfactory completion of the qualifying examinations
3. Either a completed thesis and successful oral defense or a comprehensive examination and successful oral defense. NOTE: Students who elect to complete a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning the writing process. Students who elect to take a comprehensive examination should make arrangements with their degree advisor and major area professors before their final semester, in order to prepare suitable exam questions or writing assignments for their examination and defense.
4. Graduate Assistantships. Students with assistantships are required to take 9 hours each semester. Assistantships are renewed based on the following:
  1. Students must attain the required 3.0 grade point average and maintain a good record in their assistantship work assignments.
  2. Students must make satisfactory progress toward the degree. In order to maintain satisfactory progress toward the degree during the first two semesters of study, the student must:
    1. pass the qualifying exam administered by the concentration, and
    2. take the foreign language translation exam.
  3. Students who fail to successfully complete these examinations by May 1 of the Spring semester will not receive a high priority for assistantship renewal for a third semester of study.

## Art History - Egyptian Art and Archaeology, (MA)

### MA Degree Program

Program objectives are to equip students with knowledge in a specific field of art and visual culture; to foster critical analysis of the major theories and documents of art history as a practical tool for individual research; to provide field opportunities through museum internships or archaeological excavations; and to develop strategies for the presentation of research in a clear and persuasive manner.

### Program Admission

1. For Fall semester admission with assistantship, completed materials must be received at the University by February 15. Applications received after April 1 cannot be guaranteed consideration for the Fall semester. For Spring semester admission, the deadline is November 1.
2. For the concentration in Egyptian Art and Archaeology, an undergraduate major in Egyptology, art history, anthropology, history, classical studies, or archaeology is desirable. If, after evaluation of the student's transcript, the art history faculty perceives a deficiency in these areas, the student may be required to successfully complete courses that will not count toward the Master of Arts degree.
3. A letter of intent, explaining the applicant's motivation and objectives in pursuing a graduate degree in art history.
4. A sample of undergraduate writing, preferably in art history.
5. Two letters of recommendation, at least one of which should be from a college faculty member who knows the student well.

### Note:

Applications forms for assistantships are also available from the Department of Art.

### Prerequisites for Admission to Degree Candidacy

The student shall apply for admission to degree candidacy upon the completion of 18 semester hours of graduate work. All candidacy requirements listed below must be satisfied before registering for more than 18 hours of coursework at the graduate level. To be approved for admission for candidacy, the student shall have:

1. A grade point average of at least 3.0 on a 4.0 scale.
2. Fulfilled all departmental prerequisite requirements.
3. A planned degree program that meets all departmental and graduate school requirements. Pass Qualifying Examinations
4. Pass Qualifying Examinations
  - Foreign language translation exam: The language is usually French, German, Italian or another research language appropriate to the student's field of study, to be approved by the Graduate Academic Advisor. For the concentration in Egyptian Art and Archaeology, French or German is preferred. The exam will consist of a 300-500 word passage chosen by a faculty member and must be translated within a two-hour period. Two additional attempts are allowed.
  - Image Identification Exam: For the concentration in Egyptian Art and Archaeology, the test covers key monuments of ancient Egyptian art and an entry level examination in Middle Egyptian. Two additional attempts are allowed.
5. The student must establish a history of satisfactory ratings in periodic review, a semi-annual evaluation of each student's general level of achievement by all area graduate faculty. Two unsatisfactory ratings will result in dismissal from the program.

## Program Requirements

A total of 30 semester hours for the concentration in Egyptian Art and Archaeology.

### 6 semester hours required from

- ARTH 6123 - Greek Art **Credit Hours: (3)**
- ARTH 7130 - Art Hist Methods & Prac **Credit Hours: (3)**

### 12 hours required from Egyptian Art and Archaeology:

3 semester hours selected from:

- ARTH 6111 - Art/Arch Egypt **Credit Hours: (3)**
- ARTH 6112 - Egypt Art-Old Kingdom **Credit Hours: (3)**
- ARTH 6113 - Egypt Art-New Kingdom **Credit Hours: (3)**

9 semester hours required from:

- ARTH 7115 - Middle Egyptian I **Credit Hours: (3)**
- ARTH 7116 - Middle Egyptian II **Credit Hours: (3)**
- ARTH 7117 - Middle Egyptian Lit **Credit Hours: (3)**

Students selecting the thesis option (see item 3, below) will complete 9 additional semester hours in the major area (ARTH) outside the required courses (ARTH 6123 and ARTH 7130) AND complete ARTH 7996 - Thesis. Of the electives, 6 semester hours may come from outside the department (ARTH). Students selecting the comprehensive examination option (see item 3, below) will complete 12 additional semester hours in the major area (ARTH) outside the required courses (ARTH 6123 and ARTH 7130). Of these, 6 semester hours may come from outside the department (ARTH).

### Note:

Students should consult with their academic advisor as to the required and recommended courses appropriate to their area of concentration.

## Other Requirements

1. Twenty-one semester hours of 7000 level courses, including no more than 3 credit hours for the thesis option (see below).
2. Satisfactory completion of the qualifying examinations
3. Either a completed thesis and successful oral defense or a comprehensive examination and successful oral defense. NOTE: Students who elect to complete a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning the writing process. Students who elect to take a comprehensive examination should make arrangements with their degree advisor and major area professors before their final semester, in order to prepare suitable exam questions or writing assignments for their examination and defense.
4. Graduate Assistantships. Students with assistantships are required to take 9 hours each semester. Assistantships are renewed based on the following:
  1. Students must attain the required grade point average 3.4 and maintain a good record in their assistantship work assignments.

2. Students must make satisfactory progress toward the degree. In order to maintain satisfactory progress toward the degree during the first two semesters of study, the student must:
  1. pass the qualifying exam administered by the concentration, and
  2. take the foreign language translation exam.
3. Students who fail to successfully complete these examinations by May 1 of the Spring semester will not receive a high priority for assistantship renewal for a third semester of study.

## Art History - General Art History, (MA)

### MA Degree Program

Program objectives are to equip students with knowledge in a specific field of art and visual culture; to foster critical analysis of the major theories and documents of art history as a practical tool for individual research; to provide field opportunities through museum internships or archaeological excavations; and to develop strategies for the presentation of research in a clear and persuasive manner.

### Program Admission General Art History

1. For Fall semester admission with assistantship, completed materials must be received at the University by February 15. Applications received after April 1 cannot be guaranteed consideration for the Fall semester. For Spring semester admission, the deadline is November 1.
2. For the concentration in General Art History, an undergraduate course in each of the major areas of art history is desirable: American, ancient, medieval, renaissance, baroque, and modern. If, after evaluation of the student's transcript, the art history faculty perceives a deficiency in these areas, the student may be required to successfully complete courses that will not count toward the Master of Arts degree.
3. A letter of intent, explaining the applicant's motivation and objectives in pursuing a graduate degree in art history.
4. A sample of undergraduate writing, preferably in art history.
5. Two letters of recommendation, at least one of which should be from a college faculty member who knows the student well.

### Note General Art History

Applications forms for assistantships are also available from the Department of Art.

### Prerequisites for Admission to Degree Candidacy General Art History

The student shall apply for admission to degree candidacy upon the completion of 18 semester hours of graduate work. All candidacy requirements listed below must be satisfied before registering for more than 18 hours of coursework at the graduate level. To be approved for admission for candidacy, the student shall have:

1. A grade point average of at least 3.0 on a 4.0 scale.
2. Fulfilled all departmental prerequisite requirements.
3. A planned degree program that meets all departmental and graduate school requirements. Pass Qualifying Examinations
4. Pass Qualifying Examinations
  - Foreign language translation exam: The language is usually French, German, Italian or another research language appropriate to the student's field of study, to be approved by the Graduate Academic Advisor. The exam will consist of a 300-500 word passage chosen by a faculty member and must be translated within a two-hour period. Two additional attempts are allowed.

- Image Identification Exam: For the concentration in General Art History the examination covers works of art and visual culture from various regions and time periods, ancient to modern. Two additional attempts are allowed.
5. The student must establish a history of satisfactory ratings in periodic review, a semi-annual evaluation of each student's general level of achievement by all area graduate faculty. Two unsatisfactory ratings will result in dismissal from the program.

## Program Requirements General Art History

1. A total of 30 semester hours for the concentration in General Art History.
2. The completion of ARTH 6123 or ARTH 6166 (see concentration requirements) and ARTH 7130.

## General Art History:

A minimum of 24 semester hours in art history (including the required ARTH 6123 or ARTH 6166 and ARTH 7130, with no more than 9 semester hours in 6000-level courses.

Up to 6 hours of elective credit outside the field of art history may be selected with the permission of the advisor. Included among these electives would be:

- ARTH 6381 - Art Curatorial Tech **Credit Hours: (3)**
- ARTH 6660 - Museum Collections **\*\* Credit Hours: (3)**
- ARTH 6661 - Collections Research **Credit Hours: (3)**
- ARTH 6662 - Museum Exhibitions **\*\* Credit Hours: (3)**
- ARTH 7661 - Museum Practices **\*\* Credit Hours: (3)**
- ARTH 7662 - Museums & Communities **\*\* Credit Hours: (3)**

Students selecting the thesis option (see item 3, below) will complete one elective course from the above listed options AND ARTH 7996 - Thesis. Students selecting the comprehensive examination option (see item 3, below) will complete two elective courses from the above listed options.

## Note:

Students should consult with their academic advisor as to the required and recommended courses appropriate to their area of concentration.

## Other Requirements Gen Art History

1. Twenty-one semester hours of 7000 level courses, including no more than 3 credit hours for the thesis option (see below).
2. Satisfactory completion of the qualifying examinations
3. Either a completed thesis and successful oral defense or a comprehensive examination and successful oral defense. NOTE: Students who elect to complete a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning the writing process. Students who elect to take a comprehensive examination should make arrangements with their degree advisor and major area professors before their final semester, in order to prepare suitable exam questions or writing assignments for their examination and defense.
4. Graduate Assistantships. Students with assistantships are required to take 9 hours each semester. Assistantships are renewed based on the following:
  1. 1. Students must attain the required 3.0 grade point average and maintain a good record in their assistantship work assignments.



2. 2. Students must make satisfactory progress toward the degree. In order to maintain satisfactory progress toward the degree during the first two semesters of study, the student must:
  1. 1. pass the qualifying exam administered by the concentration, and
  2. 2. take the foreign language translation exam.
3. 3. Students who fail to successfully complete these examinations by May 1 of the Spring semester will not receive a high priority for assistantship renewal for a third semester of study.

## **Art History - Museum Practices, (MA)**

### **MA Degree Program**

Program objectives are to equip students with knowledge in a specific field of art and visual culture; to foster critical analysis of the major theories and documents of art history as a practical tool for individual research; to provide field opportunities through museum internships or archaeological excavations; and to develop strategies for the presentation of research in a clear and persuasive manner.

Students who complete the requirements of the Museum Practices concentration within the MA in Art History will also receive the Graduate Certificate in Museum Studies.

### **Program Admission**

1. For Fall semester admission with assistantship, completed materials must be received at the University by February 15. Applications received after April 1 cannot be guaranteed consideration for the Fall semester. For Spring semester admission, the deadline is November 1.
2. For the concentration in African American – African Diaspora Art Histories, an undergraduate course in each of the major areas of art history is desirable: American, ancient, medieval, renaissance, baroque, and modern. If after evaluation of the student's transcript, the art history faculty perceives a deficiency in these areas, the student may be required to successfully complete courses that will not count toward the Master of Arts degree.
3. A letter of intent, explaining the applicant's motivation and objectives in pursuing a graduate degree in art history.
4. A sample of undergraduate writing, preferably in art history.
5. Two letters of recommendation, at least one of which should be from a college faculty member who knows the student well.

### **Note:**

Applications forms for assistantships are also available from the Department of Art.

### **Prerequisites for Admission to Degree Candidacy**

The student shall apply for admission to degree candidacy upon the completion of 18 semester hours of graduate work. All candidacy requirements listed below must be satisfied before registering for more than 18 hours of coursework at the graduate level. To be approved for admission for candidacy, the student shall have:

1. A grade point average of at least 3.0 on a 4.0 scale.
2. Fulfilled all departmental prerequisite requirements.
3. A planned degree program that meets all departmental and graduate school requirements. Pass Qualifying Examinations
4. Pass Qualifying Examinations

- Foreign language translation exam: The language is usually French, German, Italian or another research language appropriate to the student's field of study, to be approved by the Graduate Academic Advisor. The exam will consist of a 300-500 word passage chosen by a faculty member and must be translated within a two-hour period. Two additional attempts are allowed.
  - Image Identification Exam: For the concentration in Museum Practices the examination covers works of art and visual culture from various regions and time periods, ancient to modern. Two additional attempts are allowed.
5. The student must establish a history of satisfactory ratings in periodic review, a semi-annual evaluation of each student's general level of achievement by all area graduate faculty. Two unsatisfactory ratings will result in dismissal from the program.

## Museum Practices with Graduate Certificate in Museum Studies:

### 3 semester hours selected from ARTH 6000-level

(excluding ARTH 6381. ANTH 6660. ANTH 6661. ANTH 6662)

### 6 semester hours of Museum Studies courses

- ARTH 7661 - Museum Practices \*\* Credit Hours: (3)
- ARTH 7662 - Museums & Communities \*\* Credit Hours: (3)

### 3 semester hours of Museum Studies electives

Determined through consultation with Museum Studies advisor.

### 6 semester hours of

- ARTH 7669 - Museum Internship \*\* Credit Hours: (3-6)

### 9 hours drawn from

- ARTH 7120 - Grad Prob Medieval Art Credit Hours: (3)
- ARTH 7121 - Grad Prob Ancient Art Credit Hours: (3)
- ARTH 7125 - Egyptian Art & Arch Credit Hours: (3)
- ARTH 7140 - Grad Prob Renaissance Credit Hours: (3)
- through
- ARTH 7165 - Gr Prob Am Art Anc/Mod Credit Hours: (3)
- ARTH 7660 - Dir Indiv Study Credit Hours: (3-9)
- ARTH 7996 - Thesis Credit Hours: (1-6)

## Note:

Students should consult with their academic advisor as to the required and recommended courses appropriate to their area of concentration).

Students must submit an application for admission to the Museum Studies Graduate Certificate program before the end of their first year of study. Admission to the Museum Practices concentration does not automatically enroll the student in the Graduate Certificate in Museum Studies program.

## Other Requirements

1. Twenty-one semester hours of 7000 level courses, including no more than 3 credit hours for the thesis option (see below).
2. Satisfactory completion of the qualifying examinations
3. Either a completed thesis and successful oral defense or a comprehensive examination and successful oral defense. NOTE: Students who elect to complete a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning the writing process. Students who elect to take a comprehensive examination should make arrangements with their degree advisor and major area professors before their final semester, in order to prepare suitable exam questions or writing assignments for their examination and defense.
4. Graduate Assistantships. Students with assistantships are required to take 9 hours each semester. Assistantships are renewed based on the following:
  1. Students must attain the required grade point average (3.4 in Egyptology, 3.0 in all other concentrations) and maintain a good record in their assistantship work assignments.
  2. Students must make satisfactory progress toward the degree. In order to maintain satisfactory progress toward the degree during the first two semesters of study, the student must:
    1. pass the qualifying exam administered by the concentration, and
    2. take the foreign language translation exam.
  3. Students who fail to successfully complete these examinations by May 1 of the Spring semester will not receive a high priority for assistantship renewal for a third semester of study.

## Program Requirements

A total of 33 semester hours is required for the concentration in Museum Practices with concurrent Graduate Certificate in Museum Studies.

6 semester hours required from:

- ARTH 6123 - Greek Art **Credit Hours: (3)**  
OR
- ARTH 6166 - American Art: 1500s-1940s **Credit Hours: (3)**  
AND
- ARTH 7130 - Art Hist Methods & Prac **Credit Hours: (3)**

## Biological Sciences, (MS)

### MS Degree Program

Program objectives are: (1) understand biological principles, concepts, and theories, and in-depth knowledge in a chosen specialty; (2) develop expertise in experimental design, data analysis, and oral and written presentation of research results; and (3) become competitive for professional positions in the biological sciences.

## Program Admission

1. Application should be made online through The University of Memphis Graduate School portal <https://memphis.liaisoncas.com/applicant-ux/#/login>. Information on the application process can be obtained by emailing the department Graduate Studies Coordinator ([grad\\_studies\\_coordinator@memphis.edu](mailto:grad_studies_coordinator@memphis.edu)).
2. Official transcripts of all previous academic coursework must be sent directly from the issuing institution to The University of Memphis Graduate Admissions. Prospective MS students must hold a Baccalaureate degree from an accredited institution. An overall minimum grade point average of 2.75 (on a 4.0 scale) at the undergraduate level is usually competitive. Applicants whose highest degree is from a foreign institution must have their credentials evaluated by any credentialing agency listed on the National Association of Credential Evaluation Services' website. The course-by-course report is required.
3. To be competitive, applicants must have majored in a STEM or STEM education discipline or have completed upper division coursework in one of these disciplines.
4. The Graduate Record Exam (GRE) is not required for admission into our MS program.
5. Applicants for the Master's degree require a faculty advisor for acceptance into the program. Applicants must contact a potential faculty research advisor in the department's graduate program. Faculty research interests are listed on the department website (<https://www.memphis.edu/biology/researchareas/index.php>); applicants are encouraged to interact directly with faculty whose research interests match their own interests. The faculty advisor will send the student and the Graduate Studies Coordinator ([grad\\_studies\\_coordinator@memphis.edu](mailto:grad_studies_coordinator@memphis.edu)) a letter or email stating that (1) he/she is willing to mentor the applicant and (2) how the student will be funded while in the program.
6. Two letters of recommendation from persons capable of assessing the applicant's suitability for graduate work in biology must be submitted to the Graduate School application site (<https://memphis.liaisoncas.com/applicant-ux/#/login>) or to the Department Graduate Studies Coordinator ([grad\\_studies\\_coordinator@memphis.edu](mailto:grad_studies_coordinator@memphis.edu)).
7. F1 visa applicants for whom English is not their native language must submit proof that they have taken the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). The minimum acceptable IELTS score is 6.0. The minimum acceptable TOEFL score is 550 on the paper, 210 on the computer-based, or 79 on the internet-based test. International applicants seeking Graduate Teaching Assistantships in the Department of Biological Sciences must obtain a score of 26 or higher on the spoken English component of the TOEFL iBT. Alternatively, these applicants can take the SPEAK test (Speaking Proficiency English Assessment Kit) on campus and must obtain a score of 50 or higher in order to be appointed as a Teaching Assistant.
8. Applicants whose highest degree is from a foreign university must provide an evaluation of their credentials by WES or any credentialing agency listed on the National Association of Credential Evaluation Services web site (<http://www.naces.org>).

## Program Requirements (Thesis)

1. A minimum of 30 credit hours is required beyond the baccalaureate degree. For a full-time student, the typical time to complete the program is 3 years.
2. A grade point average of 3.0 must be maintained. A student whose grade point average drops below 3.0 will have one semester to raise his/her GPA to 3.0 or better. Continuation of a student who fails to reach a 3.0 overall GPA during two consecutive semesters while in the graduate program is at the discretion of the Graduate Studies Committee in consultation with the student's advisory committee.
3. Mandatory courses include BIOL 7000 (Orientation to Graduate Studies), BIOL 7004 (College Biology Teaching), BIOL 7102 (Thesis Proposal), 3 credit hours of BIOL 7200 (Seminar in Biology), 6 credit hours of BIOL 7092 (Research), 6 credit hours of BIOL 7996 (Thesis Research) and BIOL 7600 (MS Thesis Defense Seminar). Attendance at departmental seminars is mandatory. BIOL 7000 and BIOL 7004 must be completed during the first year of residence and BIOL 7600 in the last semester.
4. Full-time students should become candidates usually no later than the end of their fourth semester in residence after they have: (1) successfully passed BIOL 7000, BIOL 7004 and BIOL 7092 (2) successfully taken a written and oral Comprehensive Examination administered by the student advisory committee; the scope of this examination is broad and includes a review of general biological principles; (3) successfully taken the Research Prospectus/Proposal (BIOL 7102) that includes a written research proposal, a seminar on the research proposal and an examination of the proposal by the student's thesis committee.

5. At least 6 credit hours of post-candidacy thesis research (BIOL 7996 must be completed after the student becomes a candidate (no more than 6 credit hours of BIOL 7996 will be counted toward the degree).
6. A written thesis detailing the results of the student research. The thesis must demonstrate mastery of the techniques and intellectual process of scientific research.
7. An MS thesis defense seminar and final examination (BIOL 7600 ). The final examination will be conducted by the student advisory committee. The thesis committee will consist, insofar as possible, of the same graduate faculties involved in the Comprehensive Examination. The final examination will be an oral defense of the thesis and will be announced and open to the public. Upon successful completion of the examination and all degree requirements, the committee will recommend awarding the MS with Thesis degree.

## Program Requirements (Non-Thesis)

1. A minimum of 36 credit hours of graduate courses is required. Credit hours counting toward the degree must be in STEM or STEM education courses.
2. Mandatory courses include BIOL 7000 (Orientation to Graduate Studies), BIOL 7004 (College Biology Teaching) and 3 credit hours of BIOL 7200 (Seminar in Biology). BIOL 7000 and BIOL 7004 must be completed during the first year of residence. Though students are not expected to present in BIOL 7200, their attendance at the BIOL 7200 seminars is mandatory. No more than 3 semester hours can be satisfied by BIOL 7092.
3. A grade point average of 3.0 must be maintained. A student whose grade point average drops below 3.0 will have one semester to raise his/her GPA to 3.0 or better. Continuation of a student who fails to reach a 3.0 overall GPA during two consecutive semesters while in the graduate program is at the discretion of the Graduate Studies Committee in consultation with the student's Advisory Committee.
4. MS Non-Thesis students must students are required to take and pass a written and oral Comprehensive Examination, administered by the student's advisory committee usually before the end of students' last semester in residence. The scope of this examination is broad and includes a review of general biological principles.

## Biomedical Engineering, (MS)

### MS Degree Program

The Department of Biomedical Engineering at The University of Memphis and the Department of Orthopaedic Surgery and Biomedical Engineering at The University of Tennessee Health Science Center, Memphis, participate in the Joint Graduate Program in Biomedical Engineering. The Joint Program offers graduate programs leading to the degrees of Master of Science and Doctor of Philosophy in Biomedical Engineering. Students may elect courses of study in the following areas:

- Biomechanics, Movement Science, and Rehabilitation
- Biomaterials, Drug Delivery and Regenerative Technology
- Biosensors and Electrophysiology
- Cellular Biomechanical Responses

All graduate students must comply with the general requirements of the Graduate School (see Admission Regulations, Academic Regulations, and Minimum Graduate Degree Requirements) and the program requirements of the degree being pursued. The Joint Graduate Program uses an application website hosted at: <https://uthsc2023.liaisoncas.com/applicant-ux/#/login>.

#### ENTRANCE EXAMINATION

Although not required applicants may optionally submit scores for the ETS® GRE® General Test, if taken within five years of the application date. The GRE revised General Test is a third-party evaluative tool administered by the ETS (Educational Testing Service) organization. Test scores must be sent directly to Graduate Admissions from the testing agency. For the Joint Graduate Program in Biomedical Engineering, use the UTSHC code number for reporting GRE and TOEFL scores: 1850.

#### TRANSCRIPTS and LETTERS OF RECOMMENDATION

Programs in the academic Joint Graduate Program in Biomedical Engineering, a collaboration between the University of Tennessee Health Science Center (UTHSC) and the University of Memphis, require three (3) letters of recommendation from separate evaluators attesting to qualifications for successfully undertaking graduate studies, a personal statement, and curriculum vitae. All application materials including college transcripts and test score information should be submitted to UTHSC through the common application web portal hosted by UTHSC: <https://uthsc2023.liaisoncas.com/applicant-ux/#/login>.

The evaluators/faculty members who you choose should be individuals that you believe are best able to comment objectively on your intellectual and professional achievements and potential. We may call or write your recommenders for more information.

#### INTERNATIONAL APPLICANTS

**Evaluation of Credentials:** Applicants whose highest degree is from a foreign university must have their credentials evaluated. Evaluations done by any credentialing agency listed on the National Association of Credential Evaluation Services web site (<http://www.naces.org>) are acceptable. A course-by course report is required and must be sent directly to Graduate Admissions from the credentialing agency.

**English Conditional Admission:** International students are required to demonstrate a strong grasp of the English language before admission into graduate programs. Conditional admission may be granted depending on individual academic departmental policy. If English conditional admission is offered, students will need to register for English skills assessment and take instructional sessions (if required as a result of that assessment) through the University's Intensive English for Internationals (IEI) program ([www.memphis.edu/iei](http://www.memphis.edu/iei)). Upon successful completion of the requisite sessions, as determined by IEI, the student's English skills will be considered up to standard and the TOEFL/IELTS requirement may be waived depending on specific academic department policy. The student can then proceed into their graduate academic program. Please note that in order to have a complete application packet, students seeking English conditional admission will need to simultaneously apply for the IEI program through the link above and to the Graduate School (<http://www.memphis.edu/graduateadmissions>).

Please note that a student cannot be a graduate assistant (GA) until she/he has been fully admitted to the Biomedical Engineering graduate program. Questions can be directed to the program's graduate coordinator. Students will pay IEI fees until they meet the language criterion. If courses are taken outside of IEI, the student will be charged additional tuition at the regular rate.

#### PROGRAM OBJECTIVES

Program objectives are: (1) ability to apply advanced knowledge of engineering principles, physical and biological sciences and mathematics to the solution of practical engineering problems in medicine and biology; (2) meet or exceed the needs and expectations of public and private sector employers for MS graduates; and (3) preparation to pursue additional advanced studies if so desired.

## Admission Requirements

In addition to meeting the minimum admission requirements of the two universities and the Herff College of Engineering, applicants should meet the following criteria:

1. An appropriate bachelor's degree (biomedical, chemical, electrical, mechanical, or others as defined by the Joint Program);
2. An undergraduate GPA of at least 3.00 from an accredited college or university;
3. Applicants whose native language is other than English and who have earned neither a bachelor's nor a master's degree from a college or university in an English-speaking country must have achieved a TOEFL score of 85 or better overall with no sub score below 20, or an IELTS score of 6.5 or better overall with no sub score below 6.0, or PTE score of 57 or better in each sub score, or Duolingo of 110 or better overall with no sub score below 95 (earned within 2 years prior to application). Any applicant whose first language is not English but who has earned a baccalaureate or master's degree from a college or university in an English-speaking country where instruction was in English may be exempted from the requirement for the TOEFL or IELTS examination.

These are the minimum program admission requirements. Meeting minimum requirements does not guarantee admission into the Joint Program. Applicants are further advised that the department reserves the right to deny some applications for admission because of limited availability of faculty, funding, or physical facilities to accommodate the applicant's research interests. In

unusual circumstances where the above admission requirements cannot be met, an applicant may seek exceptions by contacting the Coordinator of Graduate Studies for the Joint Program.

## Graduation Requirements

Students may elect to graduate from the Joint Program with a Master of Science in Biomedical Engineering through either a thesis or a project option. Courses are offered using registration numbers for both universities; students may obtain credit in individual courses for either a UM or UT course number, but not for both.

### Thesis Option:

Thesis Option: Students must complete 30 credit hours and are required to take 6 credit hours in the life sciences area (typically BIOM 7004 and BIOM 7005), 3 credit hours in mathematics (BIOM 7110), 3 credit hours in biomedical engineering core (BIOM 7209), 3 credit hours of a required focus area core course, and 9 credit hours of elective focus area courses (core and elective focus area courses approved by research advisory committee) for a total of 24 course credit hours. Candidates without an undergraduate engineering degree are required to complete an Engineering Design course. A minimum of 70% of the total required hours for the master's degree must be 7000-level or higher course work (or The University of Tennessee equivalent). Six (6) credit hours of thesis (BIOM 7996) is required; University requirements for continued enrollment until completion may produce extra hours of thesis credit, which do not count toward the degree requirements.

The Final Examination for this degree option will be composed of an Oral Defense of the thesis and may incorporate an additional oral and/or written examination component covering a breadth of topics with the format determined by their graduate committee. NOTE: Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

- BIOM 7004 - Life Sciences Biom I Credit Hours: (3)
- BIOM 7005 - Life Sciences Biom II Credit Hours: (3)
- BIOM 7110 - Biostatistics Credit Hours: (3)
- BIOM 7209 - Biom Msrmnt/Instrmnt Credit Hours: (3)
- BIOM 7996 - Masters Thesis Credit Hours: (1-6)

### Project Option:

Students are required to complete 30 course credit hours plus 3 credit hours of project (BIOM 7991) for a total of 33 credit hours. Of the 30 course credit hours, 6 credit hours must be in the life sciences area (typically BIOM 7004 and BIOM 7005), 3 credit hours in mathematics (BIOM 7110), 3 credit hours in biomedical engineering core (BIOM 7209) and 15 credit hours in focus area courses approved by the student's advisory committee as suitable for a career in biomedical engineering. Candidates without an undergraduate engineering degree are required to complete an Engineering Design course. A minimum of 70% of the total required hours for the master's degree project option must be 7000-level or higher course work (or The University of Tennessee Health Science Center equivalent).

The Final Examination will be composed of an Oral Defense of the project and may incorporate an additional oral and/or written examination component covering a breadth of topics with the format determined by the project committee.

- BIOM 7004 - Life Sciences Biom I Credit Hours: (3)
- BIOM 7005 - Life Sciences Biom II Credit Hours: (3)
- BIOM 7209 - Biom Msrmnt/Instrmnt Credit Hours: (3)
- BIOM 7991 - Project I Credit Hours: (1-3)

## Professional Development Requirements

1. MS degree seeking students are required to attend Joint Program weekly seminars as scheduled each semester while enrolled as full-time students.
2. Each semester after the first semester, each MS student is to meet with their faculty committee to present their progress as a written report and/or an oral presentation (as determined by the faculty committee) and their plans toward completing either the thesis or project option for the degree.

## Retention Policy

1. Students who have been admitted to the program on the condition that they complete prerequisite course work must make satisfactory progress toward this goal each semester of enrollment. Failure to make satisfactory progress may result in dismissal from the program.
2. All students are required to maintain a grade point average (GPA) of at least 3.00. Failure to maintain the minimum GPA is considered sufficient cause for being dismissed from the program. In addition, a student whose GPA falls below 3.0 is ineligible for a graduate assistantship.
3. No more than seven (7) hours of C, C+, or C- grades will be counted toward degree requirements. Grades of D or F are not accepted for credit for graduation purposes, but the grades are computed in the overall cumulative GPA.. Students will be evaluated by the Joint Program faculty at the end of the semester in which a third grade C, C+, or C- or lower is earned for possible dismissal from the program.

## Biostatistics - (MS)

### Master of Science (MS) Degree Program

Hongmei Zhang, PhD, MS

*Professor and Director, Division of Epidemiology, Biostatistics and Environmental Health*

224 Robison Hall

901.678.1715

Email: hzhang6@memphis.edu

The goal of the MS in Biostatistics program is to train students for positions in government and private health agencies, industry, and research institutes, and to prepare students who plan to enter a doctoral program in biostatistics or bioinformatics. The MS in Biostatistics is more focused and provides in depth training on biostatistical analytical tools and their related theoretical background. An MS in Biostatistics is beneficial to mid-career professionals who want to engage in population health and work in population health related research institutes, hospitals, and pharmaceutical companies. Program objectives are: (1) Prepare students with analytical expertise in the field of public health; (2) Prepare students who plan to enter a doctoral program in biostatistics or bioinformatics with solid theoretical foundation; (3) Pursue innovative and rigorous research on critical public health issues to prevent disease and injury, promote well-being, and foster overall physical and mental health.

## Program Admission

A bachelor's degree is required for admission. It is required that applicants have the necessary mathematical, computational, and statistics background (e.g., calculus and linear algebra, programming, and introduction to statistics). Applicants for this program must show a potential for further study by having maintained a GPA of at least a 3.0 average in their bachelor's-level coursework. An acceptable score on the Graduate Record Examination (GRE) general test (verbal and quantitative) is required from within the past five years. Verbal and quantitative GRE scores at 50% or above are preferred in each area. Other professional school standardized test scores (MCAT, DAT, GMAT, or LSAT) may be substituted for the GRE by applicants who are working toward or who have already earned post-baccalaureate degrees for example, in medicine, dentistry, business, or law.



All applicants who will be attending the University on a visa and who are not native speakers of English must supply a minimum score of 79 on the internet-based Test of English as a Foreign Language (TOEFL/iBT), 220 on the computer-based test, or 550 on the paper-based test (TOEFL/PBT). International English Language Testing System (IELTS) is also acceptable in lieu of the TOEFL with a minimum acceptable score of 6.0.

Letters of recommendation from three individuals (at least one letter from a former professor or instructor) familiar with the applicant's academic background or experience in public health related issues, specifying in detail the applicant's capabilities for graduate study and for future performance as a public health professional, are required. Applicants must also submit a personal statement of approximately 750 to 1000 words indicating his/her present interests and career goals, including how the MS in Biostatistics will prepare the candidate to achieve these goals.

Materials submitted will be reviewed by the faculty admissions committee. Admissions decisions are made based on the overall quality of the applicant's scholarship and academic ability (based on GPAs, GRE scores, undergraduate coursework completed, and recommendations).

## Program Requirements

The total number of credit hours is 36, including two (2) core courses, seven (7) biostatistics/statistics core courses, two (2) elective courses, and a thesis. Instead of completing a thesis and thesis defense, students have the option to take a written comprehensive exam plus a Master's project with a report focusing on data analyses. Students are required to take a qualifying exam at the end of year one.

Courses Include:

### General Core Courses:

- PUBH 7170 - Epidemiology in PUBH I\*\* Credit Hours: (3)
- PUBH 7180 - Foundations of PUBH \*\* Credit Hours: (3)

### Biostatistics/Statistics core courses:

- PUBH 7150 - Biostatistical Methods I \*\* Credit Hours: (3)
- PUBH 7152 - Biostatistical Methods II \*\* Credit Hours: (3)
- PUBH 7311 - Appl Categorical Data Analys Credit Hours: (3)
- PUBH 7309 - Appl Surv Analys in Pub Hlth Credit Hours: (3)
- PUBH 7310 - Mixed Model Regression Analys Credit Hours: (3)
- MATH 6636 - Intro Statistical Theory Credit Hours: (3) \*
- MATH 7654 - Inference Theory Credit Hours: (3)

### Elective courses (6 hours)

- PUBH 7190 - Adv SAS for PUBH Prof 1 Credit Hours: (3)
- MATH 7680 - Bayesian Inference Credit Hours: (3)
- PUBH 7308 - Appl Multivariate Stat Credit Hours: (3)
- PUBH 7104 - Large Data Sets/PUBH Research Credit Hours: (3)
- PUBH 7153 - Biostat. in Bioinformatics Credit Hours: (3)
- PUBH 7172 - Epidemiology PUBH II \*\* Credit Hours: (3)
- PUBH 7141 - Epidemiologic Survey Method \*\* Credit Hours: (3)
- PUBH 7300 - Spatial Anlys/Sim for UrbnHlth \*\* Credit Hours: (3)
- PUBH 7450 - Randomized Clinical Trials I Credit Hours: (3)
- HADM 7206 - Managerial Epidemiology \*\* Credit Hours: (3)
- HADM 7109 - Health Information Systems \*\* Credit Hours: (3)

\*To take MATH 6636 (Introduction to Statistical Theory), students must have either taken or Introduction to Probability Theory (MATH 6635) or are able to document its equivalent. Given the importance of this pre-requisite

course, each student's academic advisor will ensure that his/her advisees meet this requirement before taking MATH 6636.

## Note:

\*\* denotes courses that may be available online.

## Thesis or Comprehensive Exam Route

*One of the following two options:*

For students taking the exit Comprehensive Exam route: *PUBH 7992 (3 credit hours) and a written Comprehensive Exam* including material in the following three courses: 1) PUBH 7310 (Mixed Model Regression Analysis) 2) PUBH 7311 (Applied Categorical Data Analysis) 3) COMP 7745 (Machine Learning).

OR:

For students taking the thesis route: *Thesis (3)*

PUBH 7996

## Graduation Requirements

To qualify for graduation, students need to meet the following requirements: Complete a minimum of 36 semester hours of graduate course work beyond the bachelor's degree including a 3 hour thesis credits (students have an option to replace these 3 credits by a written comprehensive exam plus a Master project with a report focusing on data analyses for a research project).

## Retention Requirements

All students enrolled in the MS Biostatistics program are expected to attain high academic achievement in all courses taken. The following criteria will be used to determine retention status of students:

Students having been admitted unconditionally who maintain a cumulative GPA of 3.00 or higher will be considered in good standing if not more than 2 (two) grades of 2.00C+ or lower has been earned.

Students must maintain a GPA of 3.00. In accordance with the Graduate School guidelines, any student not meeting this requirement will be placed on probation. The Coordinator of the MS Biostatistics will review each student's academic record to determine whether to request permission from the Graduate School to allow a student who has not maintained a 3.00 GPA to continue to enroll in classes while on probation. The Coordinator of the MS in Biostatistics must approve courses for a student on probation. Probationary status continues even if the student has a grade under appeal. If a student remains on probation for two consecutive semesters or remains on probation after taking three courses (9 semester hours) without raising the overall GPA to 3.00, the student will be suspended from the program. Appeals of suspension must be submitted in writing to the Coordinator of the MS in Biostatistics.

A student who has been suspended from the MS in Biostatistics program will be denied enrollment in PUBH courses subsequent after suspension.

## **Biostatistics - Data Science in Public Health Concentration, (MS)**

The goal of the Data Science in Public Health, added to the existing MS program, MS in Biostatistics, is two-fold: 1) to train students with advanced statistical computational skills including machine learning and data mining to solve public health challenges, and 2) to prepare students to seek positions analyzing large data from government and private health agencies, industry, and research institutes.

## Master of Science (MS) Degree Program

Hongmei Zhang, PhD, MS

*Professor and Director, Division of Epidemiology, Biostatistics and Environmental Health*

224 Robison Hall

901.678.1715

Email: hzhang6@memphis.edu

The goal of the MS in Biostatistics program is to train students for positions in government and private health agencies, industry, and research institutes, and to prepare students who plan to enter a doctoral program in biostatistics or bioinformatics. The MS in Biostatistics is more focused and provides in depth training on biostatistical analytical tools and their related theoretical background. An MS in Biostatistics is beneficial to mid-career professionals who want to engage in population health and work in population health related research institutes, hospitals, and pharmaceutical companies. Program objectives are: (1) Prepare students with analytical expertise in the field of public health; (2) Prepare students who plan to enter a doctoral program in biostatistics or bioinformatics with solid theoretical foundation; (3) Pursue innovative and rigorous research on critical public health issues to prevent disease and injury, promote well-being, and foster overall physical and mental health.

## Program Admission

A bachelor's degree is required for admission. It is required that applicants have the necessary mathematical, computational, and statistics background (e.g., calculus and linear algebra, programming, and introduction to statistics). Applicants for this program must show a potential for further study by having maintained a GPA of at least a 3.0 average in their bachelor's-level coursework. An acceptable score on the Graduate Record Examination (GRE) general test (verbal and quantitative) is required from within the past five years. Verbal and quantitative GRE scores at 50% or above are preferred in each area. Other professional school standardized test scores (MCAT, DAT, GMAT, or LSAT) may be substituted for the GRE by applicants who are working toward or who have already earned post-baccalaureate degrees for example, in medicine, dentistry, business, or law.

All applicants who will be attending the University on a visa and who are not native speakers of English must supply a minimum score of 79 on the internet-based Test of English as a Foreign Language (TOEFL/iBT), 220 on the computer-based test, or 550 on the paper-based test (TOEFL/PBT). International English Language Testing System (IELTS) is also acceptable in lieu of the TOEFL with a minimum acceptable score of 6.0.

Letters of recommendation from three individuals (at least one letter from a former professor or instructor) familiar with the applicant's academic background or experience in public health related issues, specifying in detail the applicant's capabilities for graduate study and for future performance as a public health professional, are required. Applicants must also submit a personal statement of approximately 750 to 1000 words indicating his/her present interests and career goals, including how the MS in Biostatistics will prepare the candidate to achieve these goals.

Materials submitted will be reviewed by the faculty admissions committee. Admissions decisions are made based on the overall quality of the applicant's scholarship and academic ability (based on GPAs, GRE scores, undergraduate coursework completed, and recommendations).

## Program Requirements

The total number of credit hours is 36, including two (2) core courses, seven (7) biostatistics/statistics core courses, two (2) elective courses, and a thesis. Instead of completing a thesis and thesis defense, students have the option to take a written comprehensive exam plus a Master's project with a report focusing on data analyses. Students are required to take a qualifying exam at the end of year one.

Courses Include:

**General Core Courses:**

- PUBH 7170 - Epidemiology in PUBH I\*\* Credit Hours: (3)
- PUBH 7180 - Foundations of PUBH \*\* Credit Hours: (3)

**Biostatistics/Statistics core courses:**

- PUBH 7150 - Biostatistical Methods I \*\* Credit Hours: (3)
- PUBH 7152 - Biostatistical Methods II \*\* Credit Hours: (3)
- PUBH 7311 - Appl Categorical Data Analys Credit Hours: (3)
- PUBH 7309 - Appl Surv Analys in Pub Hlth Credit Hours: (3)
- PUBH 7310 - Mixed Model Regression Analys Credit Hours: (3)
- MATH 6636 - Intro Statistical Theory Credit Hours: (3) \*
- MATH 7654 - Inference Theory Credit Hours: (3)

**Elective courses (6 hours)**

- PUBH 7190 - Adv SAS for PUBH Prof 1 Credit Hours: (3)
- MATH 7680 - Bayesian Inference Credit Hours: (3)
- PUBH 7308 - Appl Multivariate Stat Credit Hours: (3)
- PUBH 7104 - Large Data Sets/PUBH Research Credit Hours: (3)
- PUBH 7153 - Biostat. in Bioinformatics Credit Hours: (3)
- PUBH 7172 - Epidemiology PUBH II \*\* Credit Hours: (3)
- PUBH 7141 - Epidemiologic Survey Method \*\* Credit Hours: (3)
- PUBH 7300 - Spatial Anlys/Sim for UrbnHlth \*\* Credit Hours: (3)
- PUBH 7450 - Randomized Clinical Trials I Credit Hours: (3)
- HADM 7206 - Managerial Epidemiology \*\* Credit Hours: (3)
- HADM 7109 - Health Information Systems \*\* Credit Hours: (3)

\*To take MATH 6636 (Introduction to Statistical Theory), students must have either taken or Introduction to Probability Theory (MATH 6635) or are able to document its equivalent. Given the importance of this pre-requisite course, each student's academic advisor will ensure that his/her advisees meet this requirement before taking MATH 6636.

**Note:**

\*\* denotes courses that may be available online.

## Thesis or Comprehensive Exam Route

*One of the following two options:*

For students taking the exit Comprehensive Exam route: PUBH 7992 (3 credit hours) and a written Comprehensive Exam including material in the following three courses: 1) PUBH 7310 (Mixed Model Regression Analysis) 2) PUBH 7311 (Applied Categorical Data Analysis) 3) COMP 7745 (Machine Learning).

OR:

For students taking the thesis route: *Thesis (3)*

PUBH 7996

## Graduation Requirements

To qualify for graduation, students need to meet the following requirements: Complete a minimum of 36 semester hours of graduate course work beyond the bachelor's degree including a 3 hour thesis credits (students have an option to replace these 3 credits by a written comprehensive exam plus a Master project with a report focusing on data analyses for a research project).

## Retention Requirements

All students enrolled in the MS Biostatistics program are expected to attain high academic achievement in all courses taken. The following criteria will be used to determine retention status of students:

Students having been admitted unconditionally who maintain a cumulative GPA of 3.00 or higher will be considered in good standing if not more than 2 (two) grades of 2.00C+ or lower has been earned.

Students must maintain a GPA of 3.00. In accordance with the Graduate School guidelines, any student not meeting this requirement will be placed on probation. The Coordinator of the MS Biostatistics will review each student's academic record to determine whether to request permission from the Graduate School to allow a student who has not maintained a 3.00 GPA to continue to enroll in classes while on probation. The Coordinator of the MS in Biostatistics must approve courses for a student on probation. Probationary status continues even if the student has a grade under appeal. If a student remains on probation for two consecutive semesters or remains on probation after taking three courses (9 semester hours) without raising the overall GPA to 3.00, the student will be suspended from the program. Appeals of suspension must be submitted in writing to the Coordinator of the MS in Biostatistics.

A student who has been suspended from the MS in Biostatistics program will be denied enrollment in PUBH courses subsequent after suspension.

## Business Administration - Business Economics Concentration, (MBA)

The courses in the concentration will provide tools in microeconomics and macroeconomics that will help managers make better business decisions. It will provide training needed for students to pass the Certified Business Economist (CBE) exam.

## Master of Business Administration

### MBA Core Courses (30 hours):

- ACCT 7080 - Financial/Managerial Acct Mgrs \*\* Credit Hours: (3)
- BA 7501 - Leadership & Negotiation Credit Hours: 3
- ECON 7100 - Econ for Global Executive \*\* Credit Hours: (3)
- FIR 7155 - Global Financial Mgmt \*\* Credit Hours: (3)
- MIS 7650 - Info Syst Global Enterprise \*\* Credit Hours: (3)
- MKTG 7140 - Global Strategic Marketing \*\* Credit Hours: (3)
- SCMS 7313 - Supply Chain Operations Mgmt \*\* Credit Hours: (3)
- SCMS 7110 - Intro to Business Analytics \*\* Credit Hours: (3)

- BA 7503 - Advanced Business Analytics **Credit Hours: 3**
- MGMT 7160 - Global Strategic Mgmt \*\* **Credit Hours: (3)**

**Notes:**

- SCMS 7110 - Intro to Business Analytics \*\* must be completed before a student enrolls for BA 7503 – Advanced Business Analytics.
- MGMT 7160 - Global Strategic Mgmt \*\* must be taken during a student's last semester of enrollment.

## Program Admission

- All MBA applicants must have an undergraduate degree from an accredited college or university.
- For details about the admission process, required materials and deadlines, please visit the MBA website: <https://www.memphis.edu/professionalmba/admissions/index.php>
- International applicants will need to satisfy additional requirements, available here: [https://www.memphis.edu/graduateadmissions/international/add\\_requirements.php](https://www.memphis.edu/graduateadmissions/international/add_requirements.php)

## Preparatory Knowledge

There are no prerequisites for the core MBA curriculum. However, students entering the MBA programs are expected to be fluent in the language of business, with a working understanding of key concepts in economics, finance, and accounting. In addition, students are expected to have a working proficiency in statistics.

## Program Retention

Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment. In accordance with the Graduate School guidelines, any student not meeting this requirement will be placed on probation.

Students on probation must adhere to an academic plan outlined by their advisor in their next semester of enrollment. A second consecutive semester on probation can result in suspension, and may lead to termination.

## Business Economics Concentration Requirements (12 hours):

**Choose 4 of the courses listed below:**

- ECON 6315 - Applied Macroeconomics **Credit Hours: (3)**
- ECON 6810 - Quant Economic Analysis **Credit Hours: (3)**
- ECON 6550 - Game Theory/Strategic Analysis **Credit Hours: (3)**
- ECON 6023 - Personnel Economics **Credit Hours: 3**
- ECON 6120 - Economic Forecasting **Credit Hours: (3)**
- ECON 6820 - Econometrics **Credit Hours: (3)**

### NOTE:

The program website [www.memphis.edu/mba](http://www.memphis.edu/mba) provides additional information regarding course schedule, etc.

## **Business Administration - Business Information Assurance Concentration, (MBA)**

## Master of Business Administration

### MBA Core Courses (30 hours):

- ACCT 7080 - Financial/Managerial Acct Mgrs \*\* Credit Hours: (3)
- BA 7501 - Leadership & Negotiation Credit Hours: 3
- ECON 7100 - Econ for Global Executive \*\* Credit Hours: (3)
- FIR 7155 - Global Financial Mgmt \*\* Credit Hours: (3)
- MIS 7650 - Info Syst Global Enterprise \*\* Credit Hours: (3)
- MKTG 7140 - Global Strategic Marketing \*\* Credit Hours: (3)
- SCMS 7313 - Supply Chain Operations Mgmt \*\* Credit Hours: (3)
- SCMS 7110 - Intro to Business Analytics \*\* Credit Hours: (3)
- BA 7503 - Advanced Business Analytics Credit Hours: 3
- MGMT 7160 - Global Strategic Mgmt \*\* Credit Hours: (3)

#### Notes:

- SCMS 7110 - Intro to Business Analytics \*\* must be completed before a student enrolls for BA 7503 – Advanced Business Analytics.
- MGMT 7160 - Global Strategic Mgmt \*\* must be taken during a student's last semester of enrollment.

### Program Admission

- All MBA applicants must have an undergraduate degree from an accredited college or university.
- For details about the admission process, required materials and deadlines, please visit the MBA website: <https://www.memphis.edu/professionalmba/admissions/index.php>
- International applicants will need to satisfy additional requirements, available here: [https://www.memphis.edu/graduateadmissions/international/add\\_requirements.php](https://www.memphis.edu/graduateadmissions/international/add_requirements.php)

### Preparatory Knowledge

There are no prerequisites for the core MBA curriculum. However, students entering the MBA programs are expected to be fluent in the language of business, with a working understanding of key concepts in economics, finance, and accounting. In addition, students are expected to have a working proficiency in statistics.

### Program Retention

Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment. In accordance with the Graduate School guidelines, any student not meeting this requirement will be placed on probation.

Students on probation must adhere to an academic plan outlined by their advisor in their next semester of enrollment. A second consecutive semester on probation can result in suspension, and may lead to termination.

### Business Information Assurance Concentration Courses (12 hours):

#### Required Courses

- MIS 7455 - Cyber Ethics in IT **Credit Hours: (3)**
- MIS 7670 - Information Security Mgmt **Credit Hours: (3)**
- MIS 7615 - Enterprise Network & Security **Credit Hours: (3)**

Choose one course from this group:

- MIS 7160 - Mobile Application Development **Credit Hours: (3)**
- MIS 7610 - Sys Analysis & Design \*\* **Credit Hours: (3)**
- ACCT 7420 - Acct Databases/Systems **Credit Hours: (3)**

## **Business Administration - Business Project Management Concentration, (MBA)**

### Master of Business Administration

#### MBA Core Courses (30 hours):

- ACCT 7080 - Financial/Managerial Acct Mgrs \*\* **Credit Hours: (3)**
- BA 7501 - Leadership & Negotiation **Credit Hours: 3**
- ECON 7100 - Econ for Global Executive \*\* **Credit Hours: (3)**
- FIR 7155 - Global Financial Mgmt \*\* **Credit Hours: (3)**
- MIS 7650 - Info Syst Global Enterprise \*\* **Credit Hours: (3)**
- MKTG 7140 - Global Strategic Marketing \*\* **Credit Hours: (3)**
- SCMS 7313 - Supply Chain Operations Mgmt \*\* **Credit Hours: (3)**
- SCMS 7110 - Intro to Business Analytics \*\* **Credit Hours: (3)**
- BA 7503 - Advanced Business Analytics **Credit Hours: 3**
- MGMT 7160 - Global Strategic Mgmt \*\* **Credit Hours: (3)**

#### Notes:

- SCMS 7110 - Intro to Business Analytics \*\* must be completed before a student enrolls for BA 7503 – Advanced Business Analytics.
- MGMT 7160 - Global Strategic Mgmt \*\* must be taken during a student's last semester of enrollment.

### Program Admission

- All MBA applicants must have an undergraduate degree from an accredited college or university.
- For details about the admission process, required materials and deadlines, please visit the MBA website: <https://www.memphis.edu/professionalmba/admissions/index.php>
- International applicants will need to satisfy additional requirements, available here: [https://www.memphis.edu/graduateadmissions/international/add\\_requirements.php](https://www.memphis.edu/graduateadmissions/international/add_requirements.php)

### Preparatory Knowledge



There are no prerequisites for the core MBA curriculum. However, students entering the MBA programs are expected to be fluent in the language of business, with a working understanding of key concepts in economics, finance, and accounting. In addition, students are expected to have a working proficiency in statistics.

## Program Retention

Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment. In accordance with the Graduate School guidelines, any student not meeting this requirement will be placed on probation.

Students on probation must adhere to an academic plan outlined by their advisor in their next semester of enrollment. A second consecutive semester on probation can result in suspension, and may lead to termination.

## Business Project Management Concentration Courses (12 hours):

- MIS 7605 - Bus Database Systems \*\* Credit Hours: (3)
- MIS 7610 - Sys Analysis & Design \*\* Credit Hours: (3)
- MIS 7671 - Project/Change Mgmt \*\* Credit Hours: (3)
- MIS 6672 - Project Mgmt Tools/Lead Credit Hours: (3)

### NOTE:

The program website, [www.memphis.edu/mba](http://www.memphis.edu/mba), provides additional information regarding course schedule, etc.

## Business Administration - Data Analytics for Management Concentration, (MBA)

### Master of Business Administration

#### MBA Core Courses (30 hours):

- ACCT 7080 - Financial/Managerial Acct Mgrs \*\* Credit Hours: (3)
- BA 7501 - Leadership & Negotiation Credit Hours: 3
- ECON 7100 - Econ for Global Executive \*\* Credit Hours: (3)
- FIR 7155 - Global Financial Mgmt \*\* Credit Hours: (3)
- MIS 7650 - Info Syst Global Enterprise \*\* Credit Hours: (3)
- MKTG 7140 - Global Strategic Marketing \*\* Credit Hours: (3)
- SCMS 7313 - Supply Chain Operations Mgmt \*\* Credit Hours: (3)
- SCMS 7110 - Intro to Business Analytics \*\* Credit Hours: (3)
- BA 7503 - Advanced Business Analytics Credit Hours: 3
- MGMT 7160 - Global Strategic Mgmt \*\* Credit Hours: (3)

#### Notes:

- SCMS 7110 - Intro to Business Analytics \*\* must be completed before a student enrolls for BA 7503 – Advanced Business Analytics.
- MGMT 7160 - Global Strategic Mgmt \*\* must be taken during a student's last semester of enrollment.

## Program Admission

- All MBA applicants must have an undergraduate degree from an accredited college or university.
- For details about the admission process, required materials and deadlines, please visit the MBA website: <https://www.memphis.edu/professionalmba/admissions/index.php>
- International applicants will need to satisfy additional requirements, available here: [https://www.memphis.edu/graduateadmissions/international/add\\_requirements.php](https://www.memphis.edu/graduateadmissions/international/add_requirements.php)

## Preparatory Knowledge

There are no prerequisites for the core MBA curriculum. However, students entering the MBA programs are expected to be fluent in the language of business, with a working understanding of key concepts in economics, finance, and accounting. In addition, students are expected to have a working proficiency in statistics.

## Program Retention

Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment. In accordance with the Graduate School guidelines, any student not meeting this requirement will be placed on probation.

Students on probation must adhere to an academic plan outlined by their advisor in their next semester of enrollment. A second consecutive semester on probation can result in suspension, and may lead to termination.

## Data Analytics for Management Concentration Courses (12 hours):

- MIS 7700 - Fundamentals of Data Analytics **Credit Hours: (3)**
- MIS 7620 - Business Machine Learning I **\*\* Credit Hours: (3)**
- MIS 7710 - Web Analytics **Credit Hours: (3)**
- MIS 7720 - Bus. Artificial Intelligence **Credit Hours: (3)**

### NOTE:

The program website [www.memphis.edu/mba](http://www.memphis.edu/mba) provides additional information regarding course schedule, etc.

## **Business Administration - Data Analytics for Technology Concentration, (MBA)**

### Master of Business Administration

#### MBA Core Courses (30 hours):

- ACCT 7080 - Financial/Managerial Acct Mgrs **\*\* Credit Hours: (3)**
- BA 7501 - Leadership & Negotiation **Credit Hours: 3**
- ECON 7100 - Econ for Global Executive **\*\* Credit Hours: (3)**
- FIR 7155 - Global Financial Mgmt **\*\* Credit Hours: (3)**
- MIS 7650 - Info Syst Global Enterprise **\*\* Credit Hours: (3)**

- MKTG 7140 - Global Strategic Marketing \*\* Credit Hours: (3)
- SCMS 7313 - Supply Chain Operations Mgmt \*\* Credit Hours: (3)
- SCMS 7110 - Intro to Business Analytics \*\* Credit Hours: (3)
- BA 7503 - Advanced Business Analytics Credit Hours: 3
- MGMT 7160 - Global Strategic Mgmt \*\* Credit Hours: (3)

**Notes:**

- SCMS 7110 - Intro to Business Analytics \*\* must be completed before a student enrolls for BA 7503 – Advanced Business Analytics.
- MGMT 7160 - Global Strategic Mgmt \*\* must be taken during a student's last semester of enrollment.

## Program Admission

- All MBA applicants must have an undergraduate degree from an accredited college or university.
- For details about the admission process, required materials and deadlines, please visit the MBA website: <https://www.memphis.edu/professionalmba/admissions/index.php>
- International applicants will need to satisfy additional requirements, available here: [https://www.memphis.edu/graduateadmissions/international/add\\_requirements.php](https://www.memphis.edu/graduateadmissions/international/add_requirements.php)

## Preparatory Knowledge

There are no prerequisites for the core MBA curriculum. However, students entering the MBA programs are expected to be fluent in the language of business, with a working understanding of key concepts in economics, finance, and accounting. In addition, students are expected to have a working proficiency in statistics.

## Program Retention

Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment. In accordance with the Graduate School guidelines, any student not meeting this requirement will be placed on probation.

Students on probation must adhere to an academic plan outlined by their advisor in their next semester of enrollment. A second consecutive semester on probation can result in suspension, and may lead to termination.

## Data Analytics for Technology Concentration Courses (12 hours):

- MIS 7190 - Programing For Business Credit Hours: (3)
- MIS 7660 - Advanced Data Management Credit Hours: (3)
- MIS 7620 - Business Machine Learning I \*\* Credit Hours: (3)
- MIS 7621 - Business Machine Learning II Credit Hours: (3)

### NOTE:

The program website [www.memphis.edu/mba](http://www.memphis.edu/mba) provides additional information regarding course schedule, etc.

## **Business Administration - Engineering Management Concentration, (MBA)**

## Master of Business Administration

### MBA Core Courses (30 hours):

- ACCT 7080 - Financial/Managerial Acct Mgrs \*\* Credit Hours: (3)
- BA 7501 - Leadership & Negotiation Credit Hours: 3
- ECON 7100 - Econ for Global Executive \*\* Credit Hours: (3)
- FIR 7155 - Global Financial Mgmt \*\* Credit Hours: (3)
- MIS 7650 - Info Syst Global Enterprise \*\* Credit Hours: (3)
- MKTG 7140 - Global Strategic Marketing \*\* Credit Hours: (3)
- SCMS 7313 - Supply Chain Operations Mgmt \*\* Credit Hours: (3)
- SCMS 7110 - Intro to Business Analytics \*\* Credit Hours: (3)
- BA 7503 - Advanced Business Analytics Credit Hours: 3
- MGMT 7160 - Global Strategic Mgmt \*\* Credit Hours: (3)

#### Notes:

- SCMS 7110 - Intro to Business Analytics \*\* must be completed before a student enrolls for BA 7503 – Advanced Business Analytics.
- MGMT 7160 - Global Strategic Mgmt \*\* must be taken during a student's last semester of enrollment.

### Program Admission

- All MBA applicants must have an undergraduate degree from an accredited college or university.
- For details about the admission process, required materials and deadlines, please visit the MBA website: <https://www.memphis.edu/professionalmba/admissions/index.php>
- International applicants will need to satisfy additional requirements, available here: [https://www.memphis.edu/graduateadmissions/international/add\\_requirements.php](https://www.memphis.edu/graduateadmissions/international/add_requirements.php)

### Preparatory Knowledge

There are no prerequisites for the core MBA curriculum. However, students entering the MBA programs are expected to be fluent in the language of business, with a working understanding of key concepts in economics, finance, and accounting. In addition, students are expected to have a working proficiency in statistics.

### Program Retention

Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment. In accordance with the Graduate School guidelines, any student not meeting this requirement will be placed on probation.

Students on probation must adhere to an academic plan outlined by their advisor in their next semester of enrollment. A second consecutive semester on probation can result in suspension, and may lead to termination.

### Engineering Management Concentration Requirements:

This program requires the completion of 12 credit hours in one of the subject areas below. Students must select one subject area of study.

## Biomedical Engineering

Choose 4 of the courses listed below:

- BIOM 7005 - Life Sciences Biom II Credit Hours: (3)
- BIOM 7110 - Biostatistics Credit Hours: (3)
- BIOM 7209 - Biom Msrmnt/Instrmnt Credit Hours: (3)

Elective - 3 hours - Elective can be selected from any of the following courses:

- BIOM 7430 - Biomaterials Credit Hours: (3)
- BIOM 6720 - Bioelectricity Credit Hours: (4)
- BIOM 6750 - Biomechanics Credit Hours: (4)
- BIOM 7030 - Stem Cells: Culture/Appl Credit Hours: (3)
- BIOM 7470 - Tissue Engineering Credit Hours: (3)

## Civil Engineering

Choose 4 of the courses listed below:

- CIVL 6122 - Structural Analysis II Credit Hours: (3)
- CIVL 6131 - Inter Steel Design Credit Hours: (3)
- CIVL 6136 - Inter Rein Concr Design Credit Hours: (3)
- CIVL 6140 - Environmentl Engr Design Credit Hours: (3)
- CIVL 6143 - Physical/Chem Treatment Credit Hours: (3)
- CIVL 6144 - Biol Wastewater Treat Credit Hours: (3)
- CIVL 6152 - Applied Soil Mechanics Credit Hours: (3)
- CIVL 6162 - Traffic Engineering Credit Hours: (3)
- CIVL 6180 - Adv Hydrology/Hydraulics Credit Hours: (3)
- CIVL 6190 - Water Resources Planning and Management Credit Hours: (3)
- CIVL 7001 - Engineering Analysis Credit Hours: (3)
- CIVL 7012 - Prob Meth In Engr \*\* Credit Hours: (3)
- CIVL 7116 - Structural Dynamics Credit Hours: (3)
- CIVL 7117 - Finite Elem Struc Mech Credit Hours: (3)
- CIVL 7133 - Slopes and Embankments Credit Hours: (3)
- CIVL 7138 - Shallow and Deep Foundations Credit Hours: (3)
- CIVL 7139 - Earth Retaining Structures Credit Hours: (3)
- CIVL 7147 - Hazardous Waste Mgmt Credit Hours: (3)
- CIVL 7263 - Intro. to Num. Opt. for Eng \*\* Credit Hours: (3)
- CIVL 7269 - Quant Meth for Engr Dec Making Credit Hours: (3)
- CIVL 7360 - Transp Econ & Decision Making \*\* Credit Hours: (3)

## Electrical and Computer Engineering

Choose 4 of the courses listed below:

- EECE 6202 - Electricl Power Systems Credit Hours: (3)

- EECE 6204 - Power Distribution Sys Credit Hours: (3)
- EECE 6205 - Modern Grid with Renewables Credit Hours: (3)
- EECE 6206 - Electrical Power Quality Credit Hours: (3)
- EECE 6231 - Communication Theory Credit Hours: (3)
- EECE 6235 - Probabilistic Sys Anlys Credit Hours: (3)
- EECE 6272 - Engineering Software Credit Hours: (3)
- EECE 6273 - Database Engineering Credit Hours: (3)
- EECE 6251 - Control System Engr Credit Hours: (3)
- EECE 6275 - Network Programming Credit Hours: (3)
- EECE 6278 - Computer Organization Credit Hours: (3)
- EECE 6710 - Computer Architecture Credit Hours: (3)
- EECE 6711 - Fault Tolerant Comp Des Credit Hours: (3)
- EECE 6712 - Embedded Systems Credit Hours: (3)
- EECE 6720 - Intro Artificial Intelg Credit Hours: (3)
- EECE 6730 - Expert Systems Credit Hours: (3)
- EECE 6731 - Data Analytics and Visualization Credit Hours: (3)
- EECE 7251 - Random Signals & Noise \*\* Credit Hours: (3)
- EECE 7720 - Artificial Intelligence Credit Hours: (3)
- EECE 7740 - Neural Networks Credit Hours: (3)
- EECE 7012 - Fndtns/Software Engr Credit Hours: (3)
- EECE 7214 - Image Processing Credit Hours: (3)
- EECE 7216 - Computer Vision Credit Hours: (3)
- EECE 7217 - Multimedia Info Process \*\* Credit Hours: (3)

## Engineering Technology

Choose 4 of the courses listed below:

- TECH 7015 - App Stat Meth Industry Credit Hours: (3)
- TECH 7402 - Adv Quality Control Credit Hours: (3)
- TECH 7404 - Wrld/Clas Manfct Concpt \*\* Credit Hours: (3)
- TECH 7414 - Manuf Strat/Syst Design \*\* Credit Hours: (3)
- TECH 7401 - Lean Fundamentals \*\* Credit Hours: (3)
- TECH 7105 - Project Plan & Scheduling \*\* Credit Hours: (3)

## Mechanical Engineering

Choose 4 of the courses listed below:

- MECH 7341 - Engineering Analysis I Credit Hours: (3)
- MECH 7342 - Engineering Analysis II Credit Hours: (3)
- MECH 6340 - Manufacturing Processes Credit Hours: (3)
- MECH 6360 - Selection of Engr Materials Credit Hours: (3)
- MECH 6324 - Computer Aided Design II Credit Hours: (3)
- MECH 6309 - Gas Dynamics Credit Hours: (3)

- MECH 6326 - Biomedical System Analys/Mech Credit Hours: (3)

## **Business Administration - Finance Concentration, (MBA)**

### Master of Business Administration

#### MBA Core Courses (30 hours):

- ACCT 7080 - Financial/Managerial Acct Mgrs \*\* Credit Hours: (3)
- BA 7501 - Leadership & Negotiation Credit Hours: 3
- ECON 7100 - Econ for Global Executive \*\* Credit Hours: (3)
- FIR 7155 - Global Financial Mgmt \*\* Credit Hours: (3)
- MIS 7650 - Info Syst Global Enterprise \*\* Credit Hours: (3)
- MKTG 7140 - Global Strategic Marketing \*\* Credit Hours: (3)
- SCMS 7313 - Supply Chain Operations Mgmt \*\* Credit Hours: (3)
- SCMS 7110 - Intro to Business Analytics \*\* Credit Hours: (3)
- BA 7503 - Advanced Business Analytics Credit Hours: 3
- MGMT 7160 - Global Strategic Mgmt \*\* Credit Hours: (3)

#### **Notes:**

- SCMS 7110 - Intro to Business Analytics \*\* must be completed before a student enrolls for BA 7503 – Advanced Business Analytics.
- MGMT 7160 - Global Strategic Mgmt \*\* must be taken during a student's last semester of enrollment.

### Program Admission

- All MBA applicants must have an undergraduate degree from an accredited college or university.
- For details about the admission process, required materials and deadlines, please visit the MBA website: <https://www.memphis.edu/professionalmba/admissions/index.php>
- International applicants will need to satisfy additional requirements, available here: [https://www.memphis.edu/graduateadmissions/international/add\\_requirements.php](https://www.memphis.edu/graduateadmissions/international/add_requirements.php)

### Preparatory Knowledge

There are no prerequisites for the core MBA curriculum. However, students entering the MBA programs are expected to be fluent in the language of business, with a working understanding of key concepts in economics, finance, and accounting. In addition, students are expected to have a working proficiency in statistics.

### Program Retention

Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment. In accordance with the Graduate School guidelines, any student not meeting this requirement will be placed on probation.

Students on probation must adhere to an academic plan outlined by their advisor in their next semester of enrollment. A second consecutive semester on probation can result in suspension, and may lead to termination.

## Finance Concentration Courses (12 hours):

Pick any four FIR graduate courses to form your own track from the courses listed below:

- FIR 6011 - Retirement and Estate Planning \*\* Credit Hours: (3)
- FIR 6331 - Stock Portfolio Mgmt Credit Hours: (3)
- FIR 6340 - Real Estate Appraisal \*\* Credit Hours: (3)
- FIR 6550 - International Finance \*\* Credit Hours: (3)
- FIR 6610 - Cases in Financial Planning and Analysis Credit Hours: (3)
- FIR 6620 - Cases in Financial Planning Credit Hours: (3)
- FIR 6710 - Commercial Banking Credit Hours: (3)
- FIR 6720 - Mgmt Financl Institutns \*\* Credit Hours: (3)
- FIR 6721 - Fixed Income and Derivatives Credit Hours: (3)
- FIR 6730 - Financial Analysis/Certification Credit Hours: (3)
- FIR 6770 - Security Analysis/Port Mgmt Credit Hours: (3)
- FIR 6810 - Prop & Liability Insur Credit Hours: (3)
- FIR 6820 - Life & Health Insurance Credit Hours: (3)
- FIR 6870 - Risk Management \*\* Credit Hours:
- FIR 7070 - Financial Conc/Business Credit Hours: (3)
- FIR 7160 - Executive Financial Mgmt Credit Hours: (2)
- FIR 7170 - Multinational Financial Mgmt Credit Hours: (3)
- FIR 7171 - Intl Financial Markets Credit Hours: (3)
- FIR 7173 - Financial Analys/Certification \*\* Credit Hours: (3)
- FIR 7301 - Contemp Rles Thry/Prac \*\* Credit Hours: (3)
- FIR 7302 - RI Estate Dvlpmnt & Sustainblty Credit Hours: (3)
- FIR 7310 - Sustainable Real Estate Credit Hours: (3)
- FIR 7320 - Financing Real Est Trans Credit Hours: (3)
- FIR 7350 - Real Est Invest Analys Credit Hours: (3)
- FIR 7410 - Invst Thry Portfol Mgmt \*\* Credit Hours: (3)
- FIR 7648 - Entrepreneurial Finance Credit Hours: (3)
- FIR 7710 - Sem Investment Thry Credit Hours: (3)
- FIR 7721 - Financial Derivatives Credit Hours: (3)
- FIR 7724 - Micro-Structure Theory Credit Hours: (3)
- FIR 7725 - Eqty Mkts:Trad/Struct Credit Hours: (3)
- FIR 7810 - Adv Financial Mgmt Credit Hours: (3)
- FIR 7840 - Python for Finance Credit Hours: (3)
- FIR 7911 - Internship in FIR Credit Hours: (3)
- FIR 7996 - Thesis Credit Hours: (1-6)
- FIR 8170 - Intl Financial Mgmt Credit Hours: (3)
- FIR 8410 - Invst Thry Portfol Mgmt Credit Hours: (3)
- FIR 8710 - Sem Investment Thry Credit Hours: (3)
- FIR 8721 - Financial Derivatives Credit Hours: (3)
- FIR 8724 - Microstructure Theory Credit Hours: (3)
- FIR 8725 - Financial Mkts: Trad/Struct Credit Hours: (3)



- FIR 8810 - Adv Financial Mgmt **Credit Hours: (3)**
- FIR 8820 - Thry/Prac Finan Mgmt **Credit Hours: (3)**
- FIR 8840 - Quantitative Finan App **Credit Hours: (3)**
- FIR 8850 - Seminar In Finance **Credit Hours: (3)**
- FIR 8910 - Problems In Finance **Credit Hours: (1-6)**

## NOTE:

The program website [www.memphis.edu/mba](http://www.memphis.edu/mba) provides additional information regarding course schedule, etc.

## **Business Administration - Finance Concentration, (MS)**

### Master of Science

Program objectives are: (1) an understanding of the general context of business in society and a foundation knowledge of the essential business functions; (2) acquisition of an advanced level of knowledge of a specialized business discipline; (3) ability to make significant professional contributions within a functional area of business; and (4) ability to compete effectively for professional positions in the private or public sectors.

### Program Admission

Applicants to all MS programs in the Fogelman College must have the following:

1. An undergraduate degree from an accredited college or institution;
2. Application for admission and appropriate fee;
3. Official transcript from each college or university attended;
4. Satisfactory performance on undergraduate coursework and a satisfactory score on the Graduate Management Admissions test or the Graduate Record Examination GRE;
5. International applicants must submit an acceptable TOEFL score.

Qualified candidates may enter these programs at the beginning of any semester.

The Graduate Non-Degree classification allows individuals who have not yet decided to pursue a graduate degree or who have professional development needs to enroll in MS courses (a maximum of 9 credit hours). To remain enrolled as a Graduate Non-Degree student, individuals must maintain a minimum GPA of 3.0. Students should note that the 9-hour maximum is more stringent than the University Graduate School policy.

### Program Requirements

#### Prerequisite of MATH 1830 or its equivalent

Students with the necessary pre-qualifications may have the prerequisite waived by the program coordinator.

**Each candidate must complete a minimum of 33 semester hours of approved graduate courses**

The 33 graduate credits include a minimum of 18 hours in the concentration (21 if a thesis is written; students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write). At least 24 semester hours must be earned in courses at the 7000 level or higher.

## Finance Concentration:

Six courses (18 semester hours) must come from the list below, with at least three (9 semester hours) at the 7000 level or higher.

- FIR 6011 - Retirement and Estate Planning \*\* Credit Hours: (3)
- FIR 6331 - Stock Portfolio Mgmt Credit Hours: (3)
- FIR 6340 - Real Estate Appraisal \*\* Credit Hours: (3)
- FIR 6550 - International Finance \*\* Credit Hours: (3)
- FIR 6610 - Cases in Financial Planning and Analysis Credit Hours: (3)
- FIR 6620 - Cases in Financial Planning Credit Hours: (3)
- FIR 6710 - Commercial Banking Credit Hours: (3)
- FIR 6720 - Mgmt Financl Institutns \*\* Credit Hours: (3)
- FIR 6721 - Fixed Income and Derivatives Credit Hours: (3)
- FIR 6730 - Financial Analysis/Certification Credit Hours: (3)
- FIR 6770 - Security Analysis/Port Mgmt Credit Hours: (3)
- FIR 6810 - Prop & Liability Insur Credit Hours: (3)
- FIR 6820 - Life & Health Insurance Credit Hours: (3)
- FIR 6870 - Risk Management \*\* Credit Hours:
- FIR 7070 - Financial Conc/Business Credit Hours: (3)
- FIR 7160 - Executive Financial Mgmt Credit Hours: (2)
- FIR 7170 - Multinational Financial Mgmt Credit Hours: (3)
- FIR 7171 - Intl Financial Markets Credit Hours: (3)
- FIR 7173 - Financial Analysis/Certification \*\* Credit Hours: (3)
- FIR 7301 - Contemp Rles Thry/Prac \*\* Credit Hours: (3)
- FIR 7310 - Sustainable Real Estate Credit Hours: (3)
- FIR 7302 - RE Estate Dvlpmnt & Sustainblty Credit Hours: (3)
- FIR 7320 - Financing Real Est Trans Credit Hours: (3)
- FIR 7350 - Real Est Invest Analys Credit Hours: (3)
- FIR 7410 - Invst Thry Portfol Mgmt \*\* Credit Hours: (3)
- FIR 7648 - Entrepreneurial Finance Credit Hours: (3)
- FIR 7710 - Sem Investment Thry Credit Hours: (3)
- FIR 7721 - Financial Derivatives Credit Hours: (3)
- FIR 7724 - Micro-Structure Theory Credit Hours: (3)
- FIR 7725 - Eqty Mkts:Trad/Struct Credit Hours: (3)
- FIR 7810 - Adv Financial Mgmt Credit Hours: (3)
- FIR 7840 - Python for Finance Credit Hours: (3)
- FIR 7911 - Internship in FIR Credit Hours: (3)
- FIR 7996 - Thesis Credit Hours: (1-6)
- FIR 8170 - Intl Financial Mgmt Credit Hours: (3)
- FIR 8410 - Invst Thry Portfol Mgmt Credit Hours: (3)
- FIR 8710 - Sem Investment Thry Credit Hours: (3)

- FIR 8721 - Financial Derivatives **Credit Hours: (3)**
- FIR 8724 - Microstructure Theory **Credit Hours: (3)**
- FIR 8725 - Financial Mkts: Trad/Struct **Credit Hours: (3)**
- FIR 8810 - Adv Financial Mgmt **Credit Hours: (3)**
- FIR 8820 - Thry/Prac Finan Mgmt **Credit Hours: (3)**
- FIR 8840 - Quantitative Finan App **Credit Hours: (3)**
- FIR 8850 - Seminar In Finance **Credit Hours: (3)**
- FIR 8910 - Problems In Finance **Credit Hours: (1-6)**

## Electives

The remaining 5 or less courses (15 semester hours) may be chosen from graduate courses offered by other departments in the Fogelman College. Upon approval of an advisor, a graduate course can be taken from colleges other than the Fogelman College. Between concentration requirements and electives, no more than 3 courses (9 semester hours) may be taken at the 6000 level.

## **Business Administration - Healthcare Management Concentration, (MBA)**

### Master of Business Administration

#### MBA Core Courses (30 hours):

- ACCT 7080 - Financial/Managerial Acct Mgrs \*\* **Credit Hours: (3)**
- BA 7501 - Leadership & Negotiation **Credit Hours: 3**
- ECON 7100 - Econ for Global Executive \*\* **Credit Hours: (3)**
- FIR 7155 - Global Financial Mgmt \*\* **Credit Hours: (3)**
- MIS 7650 - Info Syst Global Enterprise \*\* **Credit Hours: (3)**
- MKTG 7140 - Global Strategic Marketing \*\* **Credit Hours: (3)**
- SCMS 7313 - Supply Chain Operations Mgmt \*\* **Credit Hours: (3)**
- SCMS 7110 - Intro to Business Analytics \*\* **Credit Hours: (3)**
- BA 7503 - Advanced Business Analytics **Credit Hours: 3**
- MGMT 7160 - Global Strategic Mgmt \*\* **Credit Hours: (3)**

#### Notes:

- SCMS 7110 - Intro to Business Analytics \*\* must be completed before a student enrolls for BA 7503 – Advanced Business Analytics.
- MGMT 7160 - Global Strategic Mgmt \*\* must be taken during a student's last semester of enrollment.

## Program Admission

- All MBA applicants must have an undergraduate degree from an accredited college or university.
- For details about the admission process, required materials and deadlines, please visit the MBA website: <https://www.memphis.edu/professionalmba/admissions/index.php>
- International applicants will need to satisfy additional requirements, available here: [https://www.memphis.edu/graduateadmissions/international/add\\_requirements.php](https://www.memphis.edu/graduateadmissions/international/add_requirements.php)

## Preparatory Knowledge

There are no prerequisites for the core MBA curriculum. However, students entering the MBA programs are expected to be fluent in the language of business, with a working understanding of key concepts in economics, finance, and accounting. In addition, students are expected to have a working proficiency in statistics.

## Program Retention

Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment. In accordance with the Graduate School guidelines, any student not meeting this requirement will be placed on probation.

Students on probation must adhere to an academic plan outlined by their advisor in their next semester of enrollment. A second consecutive semester on probation can result in suspension, and may lead to termination.

## Healthcare Management Concentration Courses (12 hours):

### Required:

- HADM 7105 - Hlth Policy & Org Hlth Svs \*\* Credit Hours: (3)

### Electives:

Choose 3 of the courses listed below:

- HADM 7204 - Healthcare Qual & Outcms Mgmt \*\* Credit Hours: (3)
- PUBH 7502 - Hlth Policy, Theory & Methods Credit Hours: (3)
- HADM 7102 - Health Care Law \*\* Credit Hours: (3)
- HADM 7140 - Population Health Management \*\* Credit Hours: (3)
- PUBH 7603 - PUBH Emergency Response Ldrshp \*\* Credit Hours: (3)
- PUBH 7710 - HealthCare Economics Credit Hours: (3)

## **Business Administration - Supply Chain Management Concentration, (MBA)**

### Master of Business Administration

#### MBA Core Courses (30 hours):

- ACCT 7080 - Financial/Managerial Acct Mgrs \*\* Credit Hours: (3)
- BA 7501 - Leadership & Negotiation Credit Hours: 3
- ECON 7100 - Econ for Global Executive \*\* Credit Hours: (3)
- FIR 7155 - Global Financial Mgmt \*\* Credit Hours: (3)
- MIS 7650 - Info Syst Global Enterprise \*\* Credit Hours: (3)
- MKTG 7140 - Global Strategic Marketing \*\* Credit Hours: (3)
- SCMS 7313 - Supply Chain Operations Mgmt \*\* Credit Hours: (3)

- SCMS 7110 - Intro to Business Analytics \*\* Credit Hours: (3)
- BA 7503 - Advanced Business Analytics Credit Hours: 3
- MGMT 7160 - Global Strategic Mgmt \*\* Credit Hours: (3)

**Notes:**

- SCMS 7110 - Intro to Business Analytics \*\* must be completed before a student enrolls for BA 7503 – Advanced Business Analytics.
- MGMT 7160 - Global Strategic Mgmt \*\* must be taken during a student's last semester of enrollment.

## Program Admission

- All MBA applicants must have an undergraduate degree from an accredited college or university.
- For details about the admission process, required materials and deadlines, please visit the MBA website: <https://www.memphis.edu/professionalmba/admissions/index.php>
- International applicants will need to satisfy additional requirements, available here: [https://www.memphis.edu/graduateadmissions/international/add\\_requirements.php](https://www.memphis.edu/graduateadmissions/international/add_requirements.php)

## Preparatory Knowledge

There are no prerequisites for the core MBA curriculum. However, students entering the MBA programs are expected to be fluent in the language of business, with a working understanding of key concepts in economics, finance, and accounting. In addition, students are expected to have a working proficiency in statistics.

## Program Retention

Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment. In accordance with the Graduate School guidelines, any student not meeting this requirement will be placed on probation.

Students on probation must adhere to an academic plan outlined by their advisor in their next semester of enrollment. A second consecutive semester on probation can result in suspension, and may lead to termination.

## Supply Chain Management Concentration Courses (12 hours):

- SCMS 6510 - Operations Planning & Control Credit Hours: (3)
- SCMS 6620 - Logistics Management Credit Hours: (3)
- SCMS 6650 - Supply Management Credit Hours: (3)
- SCMS 7450 - Intg SCM And Tech Credit Hours: (3)

### NOTE:

The program website [www.memphis.edu/mba](http://www.memphis.edu/mba) provides additional information regarding course schedule, etc.

## **Business Administration - Taxation Concentration, (MBA)**

### Master of Business Administration

## MBA Core Courses (30 hours):

- ACCT 7080 - Financial/Managerial Acct Mgrs \*\* Credit Hours: (3)
- BA 7501 - Leadership & Negotiation Credit Hours: 3
- ECON 7100 - Econ for Global Executive \*\* Credit Hours: (3)
- FIR 7155 - Global Financial Mgmt \*\* Credit Hours: (3)
- MIS 7650 - Info Syst Global Enterprise \*\* Credit Hours: (3)
- MKTG 7140 - Global Strategic Marketing \*\* Credit Hours: (3)
- SCMS 7313 - Supply Chain Operations Mgmt \*\* Credit Hours: (3)
- SCMS 7110 - Intro to Business Analytics \*\* Credit Hours: (3)
- BA 7503 - Advanced Business Analytics Credit Hours: 3
- MGMT 7160 - Global Strategic Mgmt \*\* Credit Hours: (3)

### Notes:

- SCMS 7110 - Intro to Business Analytics \*\* must be completed before a student enrolls for BA 7503 – Advanced Business Analytics.
- MGMT 7160 - Global Strategic Mgmt \*\* must be taken during a student's last semester of enrollment.

## Program Admission

- All MBA applicants must have an undergraduate degree from an accredited college or university.
- For details about the admission process, required materials and deadlines, please visit the MBA website: <https://www.memphis.edu/professionalmba/admissions/index.php>
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## Preparatory Knowledge

There are no prerequisites for the core MBA curriculum. However, students entering the MBA programs are expected to be fluent in the language of business, with a working understanding of key concepts in economics, finance, and accounting. In addition, students are expected to have a working proficiency in statistics.

## Program Retention

Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment. In accordance with the Graduate School guidelines, any student not meeting this requirement will be placed on probation.

Students on probation must adhere to an academic plan outlined by their advisor in their next semester of enrollment. A second consecutive semester on probation can result in suspension, and may lead to termination.

## Taxation Concentration Courses (12 hours):

### Required Courses

- ACCT 7510 - Tax Research & Theory Credit Hours: (3)
- ACCT 7511 - Tax- Partnerships/Prtnrs \*\* Credit Hours: (3)

- ACCT 7521 - Taxation/Bus Entities **Credit Hours: (3)**

### Electives (choose one):

- MIS 7700 - Fundamentals of Data Analytics **Credit Hours: (3)**  
LAW 385 US Taxation of International Income  
LAW 370 Non-Profit Organizations

### NOTE:

The program website [www.memphis.edu/mba](http://www.memphis.edu/mba) provides additional information regarding course schedule, etc.

## **Business Administration, (MBA)**

### Master of Business Administration

#### MBA Core Courses (30 hours):

- ACCT 7080 - Financial/Managerial Acct Mgrs \*\* **Credit Hours: (3)**
- BA 7501 - Leadership & Negotiation **Credit Hours: 3**
- ECON 7100 - Econ for Global Executive \*\* **Credit Hours: (3)**
- FIR 7155 - Global Financial Mgmt \*\* **Credit Hours: (3)**
- MIS 7650 - Info Syst Global Enterprise \*\* **Credit Hours: (3)**
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- SCMS 7110 - Intro to Business Analytics \*\* **Credit Hours: (3)**
- BA 7503 - Advanced Business Analytics **Credit Hours: 3**
- MGMT 7160 - Global Strategic Mgmt \*\* **Credit Hours: (3)**

#### Notes:

- SCMS 7110 - Intro to Business Analytics \*\* must be completed before a student enrolls for BA 7503 – Advanced Business Analytics.
- MGMT 7160 - Global Strategic Mgmt \*\* must be taken during a student's last semester of enrollment.

### Program Admission

- All MBA applicants must have an undergraduate degree from an accredited college or university.
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### Preparatory Knowledge

There are no prerequisites for the core MBA curriculum. However, students entering the MBA programs are expected to be fluent in the language of business, with a working understanding of key concepts in economics, finance, and accounting. In addition, students are expected to have a working proficiency in statistics.

## Program Retention

Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment. In accordance with the Graduate School guidelines, any student not meeting this requirement will be placed on probation.

Students on probation must adhere to an academic plan outlined by their advisor in their next semester of enrollment. A second consecutive semester on probation can result in suspension, and may lead to termination.

## Additional Requirements

Additional course requirements include two elective course in the Fogelman College of Business and Economics. Approval of elective courses must be obtained from the Director of MBA Programs.

## Business Administration, (MS)

### Master of Science

Program objectives are: (1) an understanding of the general context of business in society and a foundation knowledge of the essential business functions; (2) acquisition of an advanced level of knowledge of a specialized business discipline; (3) ability to make significant professional contributions within a functional area of business; and (4) ability to compete effectively for professional positions in the private or public sectors.

### Program Admission

Applicants to all MS programs in the Fogelman College must have the following:

1. An undergraduate degree from an accredited college or institution;
2. Application for admission and appropriate fee;
3. Official transcript from each college or university attended;
4. Satisfactory performance on undergraduate coursework and a satisfactory score on the Graduate Management Admissions test or the Graduate Record Examination GRE;
5. International applicants must submit an acceptable TOEFL score.

Qualified candidates may enter these programs at the beginning of any semester.

The Graduate Non-Degree classification allows individuals who have not yet decided to pursue a graduate degree or who have professional development needs to enroll in MS courses (a maximum of 9 credit hours). To remain enrolled as a Graduate Non-Degree student, individuals must maintain a minimum GPA of 3.0. Students should note that the 9-hour maximum is more stringent than the University Graduate School policy.

## Program Requirements

### Prerequisite of MATH 1830 or its equivalent

Students with the necessary pre-qualifications may have the prerequisite waived by the program coordinator.



## Each candidate must complete a minimum of 33 semester hours of approved graduate courses

The 33 graduate credits include a minimum of 18 hours in the concentration (21 if a thesis is written; students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write). At least 24 semester hours must be earned in courses at the 7000 level or higher.

## Chemistry, (MS)

### MS Degree Program

Program objectives are: (1) competence in a common core of material in the major area of specialization; (2) experience in experimental design, data analysis, and oral and written presentation of research results; (3) competitive for professional positions in the chemical sciences.

### Program Admission and Prerequisites

Prospective students, in addition to meeting the requirements for admission to The Graduate School, are required to present as a prerequisite for admission a satisfactory record of undergraduate work in chemistry; normally 32 semester hours of chemistry will be required, including quantitative analysis, organic, inorganic, and physical chemistry (biochemistry may also be taken). Students who are deficient in undergraduate work may be admitted and the deficiencies removed without graduate credit. Submission of GRE scores is required for admission, but permission for a waiver may be requested from the department for extraordinary circumstances.

### Program Requirements

#### Diagnostic Examinations

Before registering for the first time, incoming graduate students will take a series of six standardized examinations, in general, analytical, biochemistry, inorganic, organic, and physical chemistry. The examinations are at a level equivalent to completion of the following undergraduate courses at the University of Memphis: CHEM 4111 (inorganic), 4211 (analytical), 3310 and 3511 (organic), 4411 (physical), and 4512 (biochemistry).

#### Note:

A candidate for the Master of Science degree must make at least 50th percentile on the general chemistry test to remain in the program. A candidate for the Master of Science degree must make at least 50th percentile on the analytical and organic tests plus one of the remaining three or take the equivalent classes (CHEM 6111, CHEM 6211, CHEM 6311, CHEM 6411, CHEM 6511). Students should note that a score of 75th percentile on the test or a "B" or better in the course is prerequisite to higher level graduate courses in each area.

### Course Work Requirements

The thirty semester-hour total required is subject to the following restrictions:

**No more than 9 hours of**

No more than 9 hours of credit at the 6000 level may be counted towards the Master of Science degree. At least 9 hours must be in courses numbered CHEM 7100-7109-7899, with at least two areas of chemistry represented.

### A maximum of 6 semester hours

A maximum of 6 semester hours of CHEM 7996 - Thesis can be applied to the 30 semester hour requirement.

- CHEM 7996 - Thesis **Credit Hours: (1-6)**

### A maximum of 3 semester hours

A maximum of 3 semester hours of CHEM 7910 - Spec Prob In Chem/CHEM 8910 - Spec Prob In Chem may be counted toward the 30 semester hour requirement.

- CHEM 7910 - Spec Prob In Chem **Credit Hours: (1-12)**
- CHEM 8910 - Spec Prob In Chem **Credit Hours: (1-12)**

### Presentation

Presentation (CHEM 7911) is required of all graduate students. A maximum of 4 semester hours from some combination of CHEM 7911 and CHEM 7913 - Chemistry Seminar/ CHEM 8913 - Chemistry Seminar may be used to meet the 30 semester hours required.

### A maximum of 6 semester-hours

A maximum of 6 semester-hours credit can be granted for graduate courses successfully completed at other regionally accredited institutions. Credit previously earned at another institution must be presented for evaluation not later than the end of the student's second semester of enrollment.

### No more than 6 semester hours

No more than 6 semester hours of CHEM 7001 - Directed Research and CHEM 7996 - Thesis combined may be counted toward the 30 semester-hour requirement.

### Comprehensive Examinations

The student must begin the written part of the comprehensive examinations by the beginning of the third semester and take up to eight consecutive tests. These are described in the summary of the administration of the graduate program. A student pursuing the master's degree must obtain a total of at least six points. Any student who has not amassed six points at the completion of eight tests is automatically terminated from the Master's degree program. Written permission from the student's Advisory Committee and the Graduate Studies Committee is required to delay beginning the tests or to delay continuing once the student has begun taking tests. Within six months of obtaining the required six points, students must complete the oral part of the comprehensive examinations. The student will prepare a Research Prospectus on his or her thesis research problem, to be presented orally to the Advisory Committee in an open meeting and in a written form to the Graduate Studies Committee. The oral comprehensive examination can be repeated only once.

### Seminar

Participation in seminar is required during each semester of residence (excluding summer terms).

## The Advisory Committee

Upon admission to the Graduate School, the student will be advised by the Department's Graduate Studies Committee. A student must choose a major professor before the end of the first semester following enrollment. The major professor, in consultation with the student, will recommend the faculty members to be appointed to the student's Advisory Committee. This committee, which is appointed before the student's First Year Conference, must be composed of at least three members, with the major professor serving as chair. Upon appointment, the committee will review the student's progress to date and outline an appropriate program tailored to the student's individual interests to permit fulfillment of the degree requirements. The student will be regularly evaluated by their Advisor and Advisory Committee. In the unlikely event that a student changes major professors, a new Advisory Committee must be appointed.

## Thesis Option

Each student must submit a thesis acceptable to the student's Advisory Committee. The thesis can be based on work done for CHEM 7996, for which a maximum of six credit-hours can be applied to the degree requirement. NOTE: Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

## Non-Thesis Option

If a non-thesis program is selected, a student must 1) take two additional 7/8000-level course and 2) prepare a detailed report in the form of a review or proposal (which can be based on literature research). Three hours credit for CHEM 7910 will be earned. A minimum of three semester-hours from one credit of CHEM 7911 and two credits of CHEM 7913/CHEM 8913 (Seminar) must be earned. Thesis credits (CHEM 7996) do not count toward the non-thesis degree. No more than four credits of CHEM 7001 and CHEM 7910 together may be counted toward the non-thesis MS. For the non-thesis option, a maximum of 9 hours of course work may be included in a field related to chemistry (physical or biological sciences, mathematical sciences, or engineering).

- CHEM 7910 - Spec Prob In Chem **Credit Hours: (1-12)**
- CHEM 7911 - Presentation **Credit Hours: (1)**
- CHEM 7913 - Chemistry Seminar **Credit Hours: (1)**
- CHEM 8913 - Chemistry Seminar **Credit Hours: (1)**
- CHEM 7996 - Thesis **Credit Hours: (1-6)**
- CHEM 7001 - Directed Research **Credit Hours: (1-10)**

## Final Oral Examination

A final oral examination on the student's thesis or report and related material will be administered by the student's Advisory Committee after completion of all other requirements. This examination will be held seven or more days after the student has distributed copies of the thesis or report to the members of the Advisory Committee, which must be done at least one month before the end of the semester in which the student expects to graduate. If the final oral examination is unsatisfactory it must be repeated within one year; it may not be repeated more than once.

## Retention

A student pursuing the Master's degree program may be terminated for any of the following reasons:

1. Failure to maintain a grade point average of 3.0 or above. A student who has a cumulative grade point average below 3.0 will be placed on probation. Continuation in graduate school must be approved by the Vice Provost for Graduate Studies. Any person whose continuation is denied may appeal the decision to the University Council for Graduate Studies.

2. Failure to accumulate the requisite number of points on the departmental comprehensive examinations (See Comprehensive Examination Section).
3. Failure to complete the degree requirements within six years of initial enrollment in the graduate program.
4. Failure to make satisfactory progress towards the degree in a timely fashion, as determined by the Departmental Program Retention Committee.
5. Failure to satisfy the Advisory Committee on the final oral examination (See Final Oral Examination Section).

## City and Regional Planning, (MCRP)

### MCRP Degree Program

#### Program Admission

1. Applicants must satisfy the University's Graduate School admission standards and receive favorable endorsement from the planning faculty.
2. Admission will be based on applicable test scores (GRE or MAT); undergraduate grade point average; previous education and/or experience; and ability to articulate career and education objectives.
3. In addition to completing the Graduate School application, applicants should also submit the following material directly to the Graduate Program in City & Regional Planning:
  - A personal statement (500 words) describing related background, career objectives and interest in studying planning at the University of Memphis.
  - Current resume
4. In order to receive full consideration for Graduate Assistantships, application must be received by April 15.

#### Program Prerequisite

Students are accepted from all undergraduate disciplines and professional areas; however, the department determines if students must do remedial work. Some credit may be granted by the department for remedial work if obtained at the graduate level after entering the program.

#### Program Requirements

The student is required to complete a minimum of 48 semester hours comprising the following:

- Twenty-four (24) hours in the core curriculum: PLAN 7000, PLAN 7002, PLAN 7004, PLAN 7006, PLAN 7008, PLAN 7011, PLAN 7012, and PLAN 7202.
- Between eighteen (18) and twenty-one (21) hours of electives.
- Terminal project options: Either an individual three (3) hour capstone project OR six (6) hours of studio courses (PLAN 7801 Design Collaborative Studio or PLAN 7007 Project Planning Studio).

The eighteen (18) to twenty-one (21) hours of electives allow the student to extend basic knowledge gained in the core curriculum and can include such subjects as economic development planning, urban design, land use and transportation planning, planning information systems, housing, community development planning, planning law, social justice, sustainability, and environmental planning.

Students have two options for meeting the Terminal Project requirement: an individual capstone research option or a group studio option.

Terminal Project Option 1. Students who wish to pursue individual research can complete a 3-hour Capstone Project, submitted as a written report and orally defended, as a terminal experience designed to demonstrate mastery of planning process and substance.

Terminal Project Option 2. Students seeking more community engagement opportunities and experience in field-work and group development of planning policies and interventions can complete two additional studio courses for a total of six (6) hours from among PLAN 7801 Design Collaborative Studio or PLAN 7007 - Project Planning Studio.

A comprehensive examination must be successfully completed by the end of the semester in which the student expects to graduate.

## Transfer of Credits

The Director may recommend to the Graduate School credit for planning course-work successfully completed at other institutions but not to exceed 12 semester hours. For those students formerly enrolled in graduate planning programs accredited by the Planning Accreditation Board, a maximum of 24 hours in planning course-work may be approved. Credit previously earned at another institution must be presented for evaluation not later than the end of the student's second semester of enrollment.

## Civil Engineering - Agricultural Engineering Concentration, (MS)

### MS Degree Program

Please review the information provided on the Herff College of Engineering page.

### Program Admission

The Herff College of Engineering has established uniform admissions criteria for all graduate programs. Exceptions to these requirements may be addressed by the Graduate Admissions and Retention Committee of the department and must be approved by the Dean.

In addition to meeting the University minimum admission requirements, applicants must have:

1. a bachelors degree in engineering or a related science or mathematics program;
2. an undergraduate GPA that is competitive for the students' bachelors program;
3. an acceptable score on the verbal, quantitative, and analytic portions of the GRE;
4. three (3) letters of recommendation from faculty members able to objectively comment on your intellectual and professional achievements and potential.

An applicant who lacks a civil engineering bachelors degree may be required to complete undergraduate deficiency courses. If the number of deficiency courses is large, the applicant may be required to complete an undergraduate degree in civil engineering before seeking admission to the graduate program.

In addition to the above requirements, applicants whose native language is other than English must have a competitive score on the Test of English as a Foreign Language (TOEFL) or The International English Language Testing System (IELTS). Applicants whose highest degree is from an international university may be required to have their credentials (transcripts) evaluated. The department will accept evaluations done by any credentialing agency listed on the National Association of Credential Evaluation Services web site (<http://www.naces.org>). A course-by course report is required.

Applicants are advised that the stated admission requirements are minimum requirements. Meeting the minimum requirements does not guarantee admission into the masters program.

**English Conditional Admission:** International students are required to demonstrate a strong grasp of the English language before admission into the graduate program. English conditional admission may be granted on a case-by-case basis. Students will need to register for an English skills assessment and take instructional sessions (if required as a result of that assessment) through the University's Intensive English for Internationals (IEI) program ([www.memphis.edu/iei](http://www.memphis.edu/iei)). Upon successful completion of the requisite sessions, as determined by IEI, the student's English skills will be considered up to standard and the TOEFL/IELTS requirement may be waived. The student can then proceed into their graduate academic program. Please note that in order to have

a complete application packet, students seeking English conditional admission will need to simultaneously apply for the IEI program through the link above and to the Graduate School ([www.memphis.edu/graduateadmissions](http://www.memphis.edu/graduateadmissions)). Please note that a student cannot be a graduate assistant (GA) until they have been fully admitted and have begun their graduate academic program. Students will pay IEI fees until they meet the language criterion. If courses are taken outside of IEI, the student will be charged additional tuition at the regular rate.

## Program Requirements

- Thesis option: 30 credit hours total. Students electing the thesis option will be required to complete an independent research project culminating in a master's thesis. Upon completion of the thesis, the student must successfully pass an oral examination to assess mastery of the thesis topic and to evaluate the student's knowledge in Civil Engineering. **NOTE:** Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.
- Project option: 30 credit hours total. Students electing the project option must take CIVL 7001, CIVL 7012, and CIVL 7993. Upon completion of CIVL 7993, project students must make an oral presentation of their project and pass an oral comprehensive examination to evaluate the student's knowledge in Civil Engineering.
- Course-only option: 30 credit hours total. Students electing the course-only option must take CIVL 7001 and CIVL 7012. In their last semester, they must pass a take-home comprehensive exam covering all of their coursework.
- A minimum of 18 hours of Civil Engineering course work at the 7000 level will be required for all MS degree programs. No more than 9 hours of committee/advisor-approved course work below the 7000 level will be allowed in any program of study. Classes taken outside the department must be approved by the committee/advisor and must complement the student's program of study in Civil Engineering.

## Agricultural Engineering Concentration

- CIVL 6180 - Adv Hydrology/Hydraulics **Credit Hours: (3)**
- CIVL 6190 - Water Resources Planning and Management **Credit Hours: (3)**
- CIVL 6213 - Field Methods in Hydrology **Credit Hours: 3**
- CIVL 6341 - Aqueous Geochemistry **Credit Hours: 3**
- ESCI 6214 - Climatology **Credit Hours: (3)**
- ESCI 6515 - Geographic Info Science \*\* **Credit Hours: (3)**
- ESCI 6526 - Advanced Remote Sensing **Credit Hours: (3)**
- SCMS 6620 - Logistics Management **Credit Hours: (3)**
- SCMS 6650 - Supply Management **Credit Hours: (3)**
- CIVL 7001 - Engineering Analysis **Credit Hours: (3)**
- CIVL 7012 - Prob Meth In Engr \*\* **Credit Hours: (3)**
- CIVL 7170 - GW Cont Fate/Transport **Credit Hours: (3)**
- CIVL 7173 - Environmental Geochem **Credit Hours: (3)**
- CIVL 7195 - Groundwater Hydraulics **Credit Hours: (3)**
- CIVL 7197 - Ground Water Qual Cntrl **Credit Hours: (3)**
- CIVL 7198 - Computational Methods in Hydraulics and Hydrology **Credit Hours: 3**
- CIVL 7263 - Intro. to Num. Opt. for Eng \*\* **Credit Hours: (3)**
- CIVL 7264 - Simulation Modeling **Credit Hours: (3)**
- CIVL 7265 - Intro to Intermodal Freight **Credit Hours: (3)**
- SCMS 7313 - Supply Chain Operations Mgmt \*\* **Credit Hours: (3)**
- CIVL 7269 - Quant Meth for Engr Dec Making **Credit Hours: (3)**
- CIVL 7991 - Projects **Credit Hours: (3)**

## Retention Policy

All students enrolled in the Department of Civil Engineering are expected to attain high academic achievement in all courses taken. The criteria listed below will be used to determine retention status of students enrolled in the program leading to a Master of Science degree in Civil Engineering.

1. Students having been unconditionally admitted to the graduate program in Civil Engineering who maintain a cumulative grade point average of 3.00 or higher will be considered to be in good standing.
2. Students must maintain a cumulative grade point average of 3.00 in all course work at The University of Memphis, in all Civil Engineering course work at The University of Memphis, and for all 7000 level course work at The University of Memphis at the end of each semester of enrollment. Any student not meeting these conditions will be placed on probation.
3. Students admitted on probation must maintain a 3.00 average at the end of each semester until 9 hours of graduate credit are earned. A student having a cumulative grade point average less than 3.00 at the end of the period described will be dismissed. A student having a cumulative grade point average of 3.00 or above will then be subject to the retention criteria listed in 2 above.
4. A student will be permitted two (2) grades of 2.00 or lower in graduate courses taken at The University of Memphis. A student will be dismissed from the program at the end of the semester in which a third grade of 2.00 or lower is earned.
5. A student who has been dropped from the graduate program in the Department of Civil Engineering will be denied permission to enroll in Civil Engineering courses in semesters subsequent to dismissal from the department.

## Accelerated BS/MS Program

This program allows outstanding undergraduates to earn a bachelor's degree and master's degree in Civil Engineering in as little as five years by taking graduate-level technical electives that will count toward both degree programs. Specifically, students who are selected into this program can satisfy the undergraduate requirement of nine hours of technical electives by taking 6000-level courses that will then be counted toward their graduate degree program. However, any graduate coursework will not apply to the undergraduate GPA.

Students are encouraged to begin planning to enter the Accelerated B.S./M.S. program early in their undergraduate career in consultation with their advisor in the Department of Civil Engineering. Students with a minimum GPA of 3.25 may apply for the accelerated program once they have completed 15 credit-hours of 3000-level CIVL course work. In addition to an application form, students must have the recommendation of their undergraduate academic advisor and the concurrence of the department chair and graduate coordinator in the Department of Civil Engineering. In order to remain in the program, students must maintain a GPA of at least 3.25. To continue in the program past the B.S. degree, students must apply for full admission into the Graduate School and the Civil Engineering M.S. program.

## Civil Engineering - Engineering Seismology Concentration, (MS)

### MS Degree Program

Please review the information provided on the Herff College of Engineering page.

### Program Admission

The Herff College of Engineering has established uniform admissions criteria for all graduate programs. Exceptions to these requirements may be addressed by the Graduate Admissions and Retention Committee of the department and must be approved by the Dean.

In addition to meeting the University minimum admission requirements, applicants must have:

1. a bachelors degree in engineering or a related science or mathematics program;
2. an undergraduate GPA that is competitive for the students' bachelors program;
3. an acceptable score on the verbal, quantitative, and analytic portions of the GRE;
4. three (3) letters of recommendation from faculty members able to objectively comment on your intellectual and professional achievements and potential.

An applicant who lacks a civil engineering bachelors degree may be required to complete undergraduate deficiency courses. If the number of deficiency courses is large, the applicant may be required to complete an undergraduate degree in civil engineering before seeking admission to the graduate program.

In addition to the above requirements, applicants whose native language is other than English must have a competitive score on the Test of English as a Foreign Language (TOEFL) or The International English Language Testing System (IELTS). Applicants whose highest degree is from an international university may be required to have their credentials (transcripts) evaluated. The department will accept evaluations done by any credentialing agency listed on the National Association of Credential Evaluation Services web site (<http://www.naces.org>). A course-by course report is required.

Applicants are advised that the stated admission requirements are minimum requirements. Meeting the minimum requirements does not guarantee admission into the masters program.

**English Conditional Admission:** International students are required to demonstrate a strong grasp of the English language before admission into the graduate program. English conditional admission may be granted on a case-by-case basis. Students will need to register for an English skills assessment and take instructional sessions (if required as a result of that assessment) through the University's Intensive English for Internationals (IEI) program ([www.memphis.edu/iei](http://www.memphis.edu/iei)). Upon successful completion of the requisite sessions, as determined by IEI, the student's English skills will be considered up to standard and the TOEFL/IELTS requirement may be waived. The student can then proceed into their graduate academic program. Please note that in order to have a complete application packet, students seeking English conditional admission will need to simultaneously apply for the IEI program through the link above and to the Graduate School ([www.memphis.edu/graduateadmissions](http://www.memphis.edu/graduateadmissions)). Please note that a student cannot be a graduate assistant (GA) until they have been fully admitted and have begun their graduate academic program. Students will pay IEI fees until they meet the language criterion. If courses are taken outside of IEI, the student will be charged additional tuition at the regular rate.

## Program Requirements

- Thesis option: 30 credit hours total. Students electing the thesis option will be required to complete an independent research project culminating in a master's thesis. Upon completion of the thesis, the student must successfully pass an oral examination to assess mastery of the thesis topic and to evaluate the student's knowledge in Civil Engineering. **NOTE:** Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.
- Project option: 30 credit hours total. Students electing the project option must take CIVL 7001, CIVL 7012, and CIVL 7993. Upon completion of CIVL 7993, project students must make an oral presentation of their project and pass an oral comprehensive examination to evaluate the student's knowledge in Civil Engineering.
- Course-only option: 30 credit hours total. Students electing the course-only option must take CIVL 7001 and CIVL 7012. In their last semester, they must pass a take-home comprehensive exam covering all of their coursework.
- A minimum of 18 hours of Civil Engineering course work at the 7000 level will be required for all MS degree programs. No more than 9 hours of committee/advisor-approved course work below the 7000 level will be allowed in any program of study. Classes taken outside the department must be approved by the committee/advisor and must complement the student's program of study in Civil Engineering.

## Engineering Seismology:

- CIVL 7002 - Prog Tools for Scits & Engrs **Credit Hours: (3)**
- CIVL 7116 - Structural Dynamics **Credit Hours: (3)**
- CIVL 7119 - Earthquake Resist Design \*\* **Credit Hours: (3)**



- CIVL 7123 - Seismic Risk Assess Credit Hours: (3)
- CIVL 7125 - Earthquake Ground Motion Simul Credit Hours: (3)
- CIVL 7126 - Data Analysis in Geophysics Credit Hours: (3)
- CIVL 7127 - Signal Processing Earth Sci Credit Hours: (3)
- CIVL 7128 - Inverse Methods in Geophysics Credit Hours: (3)
- CIVL 7135 - Soil Dynamics Credit Hours: (3)
- CIVL 7136 - Prob & Earthquake Haz Anly Credit Hours: (3)
- CIVL 7137 - Geotechnical Earthquake Credit Hours: (3)
- CIVL 7991 - Projects Credit Hours: (3)
- CIVL 7996 - Thesis Credit Hours: (1-6)

### At least two of the following courses:

Due to the interdisciplinary nature of the Engineering Seismology concentration, students in that concentration must include at least two of the following courses:

- CIVL 7125 - Earthquake Ground Motion Simul Credit Hours: (3)
- CIVL 7126 - Data Analysis in Geophysics Credit Hours: (3)
- CIVL 7127 - Signal Processing Earth Sci Credit Hours: (3)
- CIVL 7128 - Inverse Methods in Geophysics Credit Hours: (3)
- CIVL 7136 - Prob & Earthquake Haz Anly Credit Hours: (3)

## Retention Policy

All students enrolled in the Department of Civil Engineering are expected to attain high academic achievement in all courses taken. The criteria listed below will be used to determine retention status of students enrolled in the program leading to a Master of Science degree in Civil Engineering.

1. Students having been unconditionally admitted to the graduate program in Civil Engineering who maintain a cumulative grade point average of 3.00 or higher will be considered to be in good standing.
2. Students must maintain a cumulative grade point average of 3.00 in all course work at The University of Memphis, in all Civil Engineering course work at The University of Memphis, and for all 7000 level course work at The University of Memphis at the end of each semester of enrollment. Any student not meeting these conditions will be placed on probation.
3. Students admitted on probation must maintain a 3.00 average at the end of each semester until 9 hours of graduate credit are earned. A student having a cumulative grade point average less than 3.00 at the end of the period described will be dismissed. A student having a cumulative grade point average of 3.00 or above will then be subject to the retention criteria listed in 2 above.
4. A student will be permitted two (2) grades of 2.00 or lower in graduate courses taken at The University of Memphis. A student will be dismissed from the program at the end of the semester in which a third grade of 2.00 or lower is earned.
5. A student who has been dropped from the graduate program in the Department of Civil Engineering will be denied permission to enroll in Civil Engineering courses in semesters subsequent to dismissal from the department.

## Accelerated BS/MS Program

This program allows outstanding undergraduates to earn a bachelor's degree and master's degree in Civil Engineering in as little as five years by taking graduate-level technical electives that will count toward both degree programs. Specifically, students who are selected into this program can satisfy the undergraduate requirement of nine hours of technical electives by taking 6000-level

courses that will then be counted toward their graduate degree program. However, any graduate coursework will not apply to the undergraduate GPA.

Students are encouraged to begin planning to enter the Accelerated B.S./M.S. program early in their undergraduate career in consultation with their advisor in the Department of Civil Engineering. Students with a minimum GPA of 3.25 may apply for the accelerated program once they have completed 15 credit-hours of 3000-level CIVL course work. In addition to an application form, students must have the recommendation of their undergraduate academic advisor and the concurrence of the department chair and graduate coordinator in the Department of Civil Engineering. In order to remain in the program, students must maintain a GPA of at least 3.25. To continue in the program past the B.S. degree, students must apply for full admission into the Graduate School and the Civil Engineering M.S. program.

## Civil Engineering - Environmental Engineering Concentration, (MS)

### MS Degree Program

Please review the information provided on the Herff College of Engineering page.

### Program Admission

The Herff College of Engineering has established uniform admissions criteria for all graduate programs. Exceptions to these requirements may be addressed by the Graduate Admissions and Retention Committee of the department and must be approved by the Dean.

In addition to meeting the University minimum admission requirements, applicants must have:

1. a bachelors degree in engineering or a related science or mathematics program;
2. an undergraduate GPA that is competitive for the students' bachelors program;
3. an acceptable score on the verbal, quantitative, and analytic portions of the GRE;
4. three (3) letters of recommendation from faculty members able to objectively comment on your intellectual and professional achievements and potential.

An applicant who lacks a civil engineering bachelors degree may be required to complete undergraduate deficiency courses. If the number of deficiency courses is large, the applicant may be required to complete an undergraduate degree in civil engineering before seeking admission to the graduate program.

In addition to the above requirements, applicants whose native language is other than English must have a competitive score on the Test of English as a Foreign Language (TOEFL) or The International English Language Testing System (IELTS). Applicants whose highest degree is from an international university may be required to have their credentials (transcripts) evaluated. The department will accept evaluations done by any credentialing agency listed on the National Association of Credential Evaluation Services web site (<http://www.naces.org>). A course-by course report is required.

Applicants are advised that the stated admission requirements are minimum requirements. Meeting the minimum requirements does not guarantee admission into the masters program.

**English Conditional Admission:** International students are required to demonstrate a strong grasp of the English language before admission into the graduate program. English conditional admission may be granted on a case-by-case basis. Students will need to register for an English skills assessment and take instructional sessions (if required as a result of that assessment) through the University's Intensive English for Internationals (IEI) program ([www.memphis.edu/iei](http://www.memphis.edu/iei)). Upon successful completion of the requisite sessions, as determined by IEI, the student's English skills will be considered up to standard and the TOEFL/IELTS requirement may be waived. The student can then proceed into their graduate academic program. Please note that in order to have a complete application packet, students seeking English conditional admission will need to simultaneously apply for the IEI program through the link above and to the Graduate School ([www.memphis.edu/graduateadmissions](http://www.memphis.edu/graduateadmissions)). Please note that a student cannot be a graduate assistant (GA) until they have been fully admitted and have begun their graduate academic program.

Students will pay IEI fees until they meet the language criterion. If courses are taken outside of IEI, the student will be charged additional tuition at the regular rate.

## Program Requirements

- Thesis option: 30 credit hours total. Students electing the thesis option will be required to complete an independent research project culminating in a master's thesis. Upon completion of the thesis, the student must successfully pass an oral examination to assess mastery of the thesis topic and to evaluate the student's knowledge in Civil Engineering. **NOTE:** Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.
- Project option: 30 credit hours total. Students electing the project option must take CIVL 7001, CIVL 7012, and CIVL 7993. Upon completion of CIVL 7993, project students must make an oral presentation of their project and pass an oral comprehensive examination to evaluate the student's knowledge in Civil Engineering.
- Course-only option: 30 credit hours total. Students electing the course-only option must take CIVL 7001 and CIVL 7012. In their last semester, they must pass a take-home comprehensive exam covering all of their coursework.
- A minimum of 18 hours of Civil Engineering course work at the 7000 level will be required for all MS degree programs. No more than 9 hours of committee/advisor-approved course work below the 7000 level will be allowed in any program of study. Classes taken outside the department must be approved by the committee/advisor and must complement the student's program of study in Civil Engineering.

## Environmental Engineering:

- CIVL 6140 - Environmental Engr Design Credit Hours: (3)
- CIVL 6143 - Physical/Chem Treatment Credit Hours: (3)
- CIVL 6144 - Biol Wastewater Treat Credit Hours: (3)
- CIVL 6149 - Pump Station Design Credit Hours: (3)
- CIVL 7141 - Water Trt Plant Dsgn Credit Hours: (3)
- CIVL 7142 - Wastewater Trt Plnt Dsgn Credit Hours: (3)
- CIVL 7143 - Solid Waste Mgmt Credit Hours: (3)
- CIVL 7144 - Residuals Mgmt Credit Hours: (3)
- CIVL 7145 - Adv Biological Treatmnt Credit Hours: (3)
- CIVL 7146 - Adv Phys/Chem Treatmnt Credit Hours: (3)
- CIVL 7147 - Hazardous Waste Mgmt Credit Hours: (3)
- CIVL 7154 - Indust Wastewater Treat Credit Hours: (3)
- CIVL 7185 - Hydraul Open Channels Credit Hours: (3)
- CIVL 7195 - Groundwater Hydraulics Credit Hours: (3)
- CIVL 7196 - Urban Drainage Credit Hours: (3)
- CIVL 7991 - Projects Credit Hours: (3)
- CIVL 7996 - Thesis Credit Hours: (1-6)

## Retention Policy

All students enrolled in the Department of Civil Engineering are expected to attain high academic achievement in all courses taken. The criteria listed below will be used to determine retention status of students enrolled in the program leading to a Master of Science degree in Civil Engineering.

1. Students having been unconditionally admitted to the graduate program in Civil Engineering who maintain a cumulative grade point average of 3.00 or higher will be considered to be in good standing.
2. Students must maintain a cumulative grade point average of 3.00 in all course work at The University of Memphis, in all Civil Engineering course work at The University of Memphis, and for all 7000 level course work at The University of Memphis at the end of each semester of enrollment. Any student not meeting these conditions will be placed on probation.
3. Students admitted on probation must maintain a 3.00 average at the end of each semester until 9 hours of graduate credit are earned. A student having a cumulative grade point average less than 3.00 at the end of the period described will be dismissed. A student having a cumulative grade point average of 3.00 or above will then be subject to the retention criteria listed in 2 above.
4. A student will be permitted two (2) grades of 2.00 or lower in graduate courses taken at The University of Memphis. A student will be dismissed from the program at the end of the semester in which a third grade of 2.00 or lower is earned.
5. A student who has been dropped from the graduate program in the Department of Civil Engineering will be denied permission to enroll in Civil Engineering courses in semesters subsequent to dismissal from the department.

## Accelerated BS/MS Program

This program allows outstanding undergraduates to earn a bachelor's degree and master's degree in Civil Engineering in as little as five years by taking graduate-level technical electives that will count toward both degree programs. Specifically, students who are selected into this program can satisfy the undergraduate requirement of nine hours of technical electives by taking 6000-level courses that will then be counted toward their graduate degree program. However, any graduate coursework will not apply to the undergraduate GPA.

Students are encouraged to begin planning to enter the Accelerated B.S./M.S. program early in their undergraduate career in consultation with their advisor in the Department of Civil Engineering. Students with a minimum GPA of 3.25 may apply for the accelerated program once they have completed 15 credit-hours of 3000-level CIVL course work. In addition to an application form, students must have the recommendation of their undergraduate academic advisor and the concurrence of the department chair and graduate coordinator in the Department of Civil Engineering. In order to remain in the program, students must maintain a GPA of at least 3.25. To continue in the program past the B.S. degree, students must apply for full admission into the Graduate School and the Civil Engineering M.S. program.

## Civil Engineering - Geotechnical Engineering Concentration, (MS)

### MS Degree Program

Please review the information provided on the Herff College of Engineering page.

### Program Admission

The Herff College of Engineering has established uniform admissions criteria for all graduate programs. Exceptions to these requirements may be addressed by the Graduate Admissions and Retention Committee of the department and must be approved by the Dean.

In addition to meeting the University minimum admission requirements, applicants must have:

1. a bachelors degree in engineering or a related science or mathematics program;
2. an undergraduate GPA that is competitive for the students' bachelors program;
3. an acceptable score on the verbal, quantitative, and analytic portions of the GRE;
4. three (3) letters of recommendation from faculty members able to objectively comment on your intellectual and professional achievements and potential.

An applicant who lacks a civil engineering bachelors degree may be required to complete undergraduate deficiency courses. If the number of deficiency courses is large, the applicant may be required to complete an undergraduate degree in civil engineering before seeking admission to the graduate program.

In addition to the above requirements, applicants whose native language is other than English must have a competitive score on the Test of English as a Foreign Language (TOEFL) or The International English Language Testing System (IELTS). Applicants whose highest degree is from an international university may be required to have their credentials (transcripts) evaluated. The department will accept evaluations done by any credentialing agency listed on the National Association of Credential Evaluation Services web site (<http://www.naces.org>). A course-by course report is required.

Applicants are advised that the stated admission requirements are minimum requirements. Meeting the minimum requirements does not guarantee admission into the masters program.

**English Conditional Admission:** International students are required to demonstrate a strong grasp of the English language before admission into the graduate program. English conditional admission may be granted on a case-by-case basis. Students will need to register for an English skills assessment and take instructional sessions (if required as a result of that assessment) through the University's Intensive English for Internationals (IEI) program ([www.memphis.edu/iei](http://www.memphis.edu/iei)). Upon successful completion of the requisite sessions, as determined by IEI, the student's English skills will be considered up to standard and the TOEFL/IELTS requirement may be waived. The student can then proceed into their graduate academic program. Please note that in order to have a complete application packet, students seeking English conditional admission will need to simultaneously apply for the IEI program through the link above and to the Graduate School ([www.memphis.edu/graduateadmissions](http://www.memphis.edu/graduateadmissions)). Please note that a student cannot be a graduate assistant (GA) until they have been fully admitted and have begun their graduate academic program. Students will pay IEI fees until they meet the language criterion. If courses are taken outside of IEI, the student will be charged additional tuition at the regular rate.

## Program Requirements

- Thesis option: 30 credit hours total. Students electing the thesis option will be required to complete an independent research project culminating in a master's thesis. Upon completion of the thesis, the student must successfully pass an oral examination to assess mastery of the thesis topic and to evaluate the student's knowledge in Civil Engineering. **NOTE:** Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.
- Project option: 30 credit hours total. Students electing the project option must take CIVL 7001, CIVL 7012, and CIVL 7993. Upon completion of CIVL 7993, project students must make an oral presentation of their project and pass an oral comprehensive examination to evaluate the student's knowledge in Civil Engineering.
- Course-only option: 30 credit hours total. Students electing the course-only option must take CIVL 7001 and CIVL 7012. In their last semester, they must pass a take-home comprehensive exam covering all of their coursework.
- A minimum of 18 hours of Civil Engineering course work at the 7000 level will be required for all MS degree programs. No more than 9 hours of committee/advisor-approved course work below the 7000 level will be allowed in any program of study. Classes taken outside the department must be approved by the committee/advisor and must complement the student's program of study in Civil Engineering.

## Geotechnical Engineering:

- CIVL 6152 - Applied Soil Mechanics **Credit Hours: (3)**
- CIVL 6155 - Pavement Design and Evaluation **Credit Hours: (3)**
- CIVL 7132 - Advanced Soil Mech **Credit Hours: (3)**
- CIVL 7133 - Slopes and Embankments **Credit Hours: (3)**
- CIVL 7135 - Soil Dynamics **Credit Hours: (3)**
- CIVL 7136 - Prob & Earthquake Haz Anly **Credit Hours: (3)**
- CIVL 7137 - Geotechnical Earthquake **Credit Hours: (3)**

- CIVL 7138 - Shallow and Deep Foundations **Credit Hours: (3)**
- CIVL 7139 - Earth Retaining Structures **Credit Hours: (3)**
- CIVL 7166 - Design Hgwy Airprt Pvmt **Credit Hours: (3)**
- CIVL 7991 - Projects **Credit Hours: (3)**
- CIVL 7996 - Thesis **Credit Hours: (1-6)**

## Retention Policy

All students enrolled in the Department of Civil Engineering are expected to attain high academic achievement in all courses taken. The criteria listed below will be used to determine retention status of students enrolled in the program leading to a Master of Science degree in Civil Engineering.

1. Students having been unconditionally admitted to the graduate program in Civil Engineering who maintain a cumulative grade point average of 3.00 or higher will be considered to be in good standing.
2. Students must maintain a cumulative grade point average of 3.00 in all course work at The University of Memphis, in all Civil Engineering course work at The University of Memphis, and for all 7000 level course work at The University of Memphis at the end of each semester of enrollment. Any student not meeting these conditions will be placed on probation.
3. Students admitted on probation must maintain a 3.00 average at the end of each semester until 9 hours of graduate credit are earned. A student having a cumulative grade point average less than 3.00 at the end of the period described will be dismissed. A student having a cumulative grade point average of 3.00 or above will then be subject to the retention criteria listed in 2 above.
4. A student will be permitted two (2) grades of 2.00 or lower in graduate courses taken at The University of Memphis. A student will be dismissed from the program at the end of the semester in which a third grade of 2.00 or lower is earned.
5. A student who has been dropped from the graduate program in the Department of Civil Engineering will be denied permission to enroll in Civil Engineering courses in semesters subsequent to dismissal from the department.

## Accelerated BS/MS Program

This program allows outstanding undergraduates to earn a bachelor's degree and master's degree in Civil Engineering in as little as five years by taking graduate-level technical electives that will count toward both degree programs. Specifically, students who are selected into this program can satisfy the undergraduate requirement of nine hours of technical electives by taking 6000-level courses that will then be counted toward their graduate degree program. However, any graduate coursework will not apply to the undergraduate GPA.

Students are encouraged to begin planning to enter the Accelerated B.S./M.S. program early in their undergraduate career in consultation with their advisor in the Department of Civil Engineering. Students with a minimum GPA of 3.25 may apply for the accelerated program once they have completed 15 credit-hours of 3000-level CIVL course work. In addition to an application form, students must have the recommendation of their undergraduate academic advisor and the concurrence of the department chair and graduate coordinator in the Department of Civil Engineering. In order to remain in the program, students must maintain a GPA of at least 3.25. To continue in the program past the B.S. degree, students must apply for full admission into the Graduate School and the Civil Engineering M.S. program.

## Civil Engineering - No Concentration, (MS)

### MS Degree Program

Please review the information provided on the Herff College of Engineering page.

## Program Admission

The Herff College of Engineering has established uniform admissions criteria for all graduate programs. Exceptions to these requirements may be addressed by the Graduate Admissions and Retention Committee of the department and must be approved by the Dean.

In addition to meeting the University minimum admission requirements, applicants must have:

1. a bachelors degree in engineering or a related science or mathematics program;
2. an undergraduate GPA that is competitive for the students' bachelors program;
3. an acceptable score on the verbal, quantitative, and analytic portions of the GRE;
4. three (3) letters of recommendation from faculty members able to objectively comment on your intellectual and professional achievements and potential.

An applicant who lacks a civil engineering bachelors degree may be required to complete undergraduate deficiency courses. If the number of deficiency courses is large, the applicant may be required to complete an undergraduate degree in civil engineering before seeking admission to the graduate program.

In addition to the above requirements, applicants whose native language is other than English must have a competitive score on the Test of English as a Foreign Language (TOEFL) or The International English Language Testing System (IELTS). Applicants whose highest degree is from an international university may be required to have their credentials (transcripts) evaluated. The department will accept evaluations done by any credentialing agency listed on the National Association of Credential Evaluation Services web site (<http://www.naces.org>). A course-by course report is required.

Applicants are advised that the stated admission requirements are minimum requirements. Meeting the minimum requirements does not guarantee admission into the masters program.

**English Conditional Admission:** International students are required to demonstrate a strong grasp of the English language before admission into the graduate program. English conditional admission may be granted on a case-by-case basis. Students will need to register for an English skills assessment and take instructional sessions (if required as a result of that assessment) through the University's Intensive English for Internationals (IEI) program ([www.memphis.edu/iei](http://www.memphis.edu/iei)). Upon successful completion of the requisite sessions, as determined by IEI, the student's English skills will be considered up to standard and the TOEFL/IELTS requirement may be waived. The student can then proceed into their graduate academic program. Please note that in order to have a complete application packet, students seeking English conditional admission will need to simultaneously apply for the IEI program through the link above and to the Graduate School ([www.memphis.edu/graduateadmissions](http://www.memphis.edu/graduateadmissions)). Please note that a student cannot be a graduate assistant (GA) until they have been fully admitted and have begun their graduate academic program. Students will pay IEI fees until they meet the language criterion. If courses are taken outside of IEI, the student will be charged additional tuition at the regular rate.

## Program Requirements

- Thesis option: 30 credit hours total. Students electing the thesis option will be required to complete an independent research project culminating in a master's thesis. Upon completion of the thesis, the student must successfully pass an oral examination to assess mastery of the thesis topic and to evaluate the student's knowledge in Civil Engineering. **NOTE:** Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.
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- Course-only option: 30 credit hours total. Students electing the course-only option must take CIVL 7001 and CIVL 7012. In their last semester, they must pass a take-home comprehensive exam covering all of their coursework.
- A minimum of 18 hours of Civil Engineering course work at the 7000 level will be required for all MS degree programs. No more than 9 hours of committee/advisor-approved course work below the 7000 level will be allowed in

any program of study. Classes taken outside the department must be approved by the committee/advisor and must complement the student's program of study in Civil Engineering.

## Retention Policy

All students enrolled in the Department of Civil Engineering are expected to attain high academic achievement in all courses taken. The criteria listed below will be used to determine retention status of students enrolled in the program leading to a Master of Science degree in Civil Engineering.

1. Students having been unconditionally admitted to the graduate program in Civil Engineering who maintain a cumulative grade point average of 3.00 or higher will be considered to be in good standing.
2. Students must maintain a cumulative grade point average of 3.00 in all course work at The University of Memphis, in all Civil Engineering course work at The University of Memphis, and for all 7000 level course work at The University of Memphis at the end of each semester of enrollment. Any student not meeting these conditions will be placed on probation.
3. Students admitted on probation must maintain a 3.00 average at the end of each semester until 9 hours of graduate credit are earned. A student having a cumulative grade point average less than 3.00 at the end of the period described will be dismissed. A student having a cumulative grade point average of 3.00 or above will then be subject to the retention criteria listed in 2 above.
4. A student will be permitted two (2) grades of 2.00 or lower in graduate courses taken at The University of Memphis. A student will be dismissed from the program at the end of the semester in which a third grade of 2.00 or lower is earned.
5. A student who has been dropped from the graduate program in the Department of Civil Engineering will be denied permission to enroll in Civil Engineering courses in semesters subsequent to dismissal from the department.

## Accelerated BS/MS Program

This program allows outstanding undergraduates to earn a bachelor's degree and master's degree in Civil Engineering in as little as five years by taking graduate-level technical electives that will count toward both degree programs. Specifically, students who are selected into this program can satisfy the undergraduate requirement of nine hours of technical electives by taking 6000-level courses that will then be counted toward their graduate degree program. However, any graduate coursework will not apply to the undergraduate GPA.

Students are encouraged to begin planning to enter the Accelerated B.S./M.S. program early in their undergraduate career in consultation with their advisor in the Department of Civil Engineering. Students with a minimum GPA of 3.25 may apply for the accelerated program once they have completed 15 credit-hours of 3000-level CIVL course work. In addition to an application form, students must have the recommendation of their undergraduate academic advisor and the concurrence of the department chair and graduate coordinator in the Department of Civil Engineering. In order to remain in the program, students must maintain a GPA of at least 3.25. To continue in the program past the B.S. degree, students must apply for full admission into the Graduate School and the Civil Engineering M.S. program.

## Civil Engineering - Structural Engineering Concentration, (MS)

### MS Degree Program

Please review the information provided on the Herff College of Engineering page.

### Program Admission



The Herff College of Engineering has established uniform admissions criteria for all graduate programs. Exceptions to these requirements may be addressed by the Graduate Admissions and Retention Committee of the department and must be approved by the Dean.

In addition to meeting the University minimum admission requirements, applicants must have:

1. a bachelors degree in engineering or a related science or mathematics program;
2. an undergraduate GPA that is competitive for the students' bachelors program;
3. an acceptable score on the verbal, quantitative, and analytic portions of the GRE;
4. three (3) letters of recommendation from faculty members able to objectively comment on your intellectual and professional achievements and potential.

An applicant who lacks a civil engineering bachelors degree may be required to complete undergraduate deficiency courses. If the number of deficiency courses is large, the applicant may be required to complete an undergraduate degree in civil engineering before seeking admission to the graduate program.

In addition to the above requirements, applicants whose native language is other than English must have a competitive score on the Test of English as a Foreign Language (TOEFL) or The International English Language Testing System (IELTS). Applicants whose highest degree is from an international university may be required to have their credentials (transcripts) evaluated. The department will accept evaluations done by any credentialing agency listed on the National Association of Credential Evaluation Services web site (<http://www.naces.org>). A course-by course report is required.

Applicants are advised that the stated admission requirements are minimum requirements. Meeting the minimum requirements does not guarantee admission into the masters program.

**English Conditional Admission:** International students are required to demonstrate a strong grasp of the English language before admission into the graduate program. English conditional admission may be granted on a case-by-case basis. Students will need to register for an English skills assessment and take instructional sessions (if required as a result of that assessment) through the University's Intensive English for Internationals (IEI) program ([www.memphis.edu/iei](http://www.memphis.edu/iei)). Upon successful completion of the requisite sessions, as determined by IEI, the student's English skills will be considered up to standard and the TOEFL/IELTS requirement may be waived. The student can then proceed into their graduate academic program. Please note that in order to have a complete application packet, students seeking English conditional admission will need to simultaneously apply for the IEI program through the link above and to the Graduate School ([www.memphis.edu/graduateadmissions](http://www.memphis.edu/graduateadmissions)). Please note that a student cannot be a graduate assistant (GA) until they have been fully admitted and have begun their graduate academic program. Students will pay IEI fees until they meet the language criterion. If courses are taken outside of IEI, the student will be charged additional tuition at the regular rate.

## Program Requirements

- Thesis option: 30 credit hours total. Students electing the thesis option will be required to complete an independent research project culminating in a master's thesis. Upon completion of the thesis, the student must successfully pass an oral examination to assess mastery of the thesis topic and to evaluate the student's knowledge in Civil Engineering. **NOTE:** Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.
- Project option: 30 credit hours total. Students electing the project option must take CIVL 7001, CIVL 7012, and CIVL 7993. Upon completion of CIVL 7993, project students must make an oral presentation of their project and pass an oral comprehensive examination to evaluate the student's knowledge in Civil Engineering.
- Course-only option: 30 credit hours total. Students electing the course-only option must take CIVL 7001 and CIVL 7012. In their last semester, they must pass a take-home comprehensive exam covering all of their coursework.
- A minimum of 18 hours of Civil Engineering course work at the 7000 level will be required for all MS degree programs. No more than 9 hours of committee/advisor-approved course work below the 7000 level will be allowed in any program of study. Classes taken outside the department must be approved by the committee/advisor and must complement the student's program of study in Civil Engineering.

## Structural Engineering:

- CIVL 6122 - Structural Analysis II Credit Hours: (3)
- CIVL 6131 - Inter Steel Design Credit Hours: (3)
- CIVL 6136 - Inter Rein Concr Design Credit Hours: (3)
- CIVL 7001 - Engineering Analysis Credit Hours: (3)
- CIVL 7111 - Computatnl Mechncs Credit Hours: (3)
- CIVL 7112 - Plstc Dsgn Steel Strctr Credit Hours: (3)
- CIVL 7113 - Prestressed Cncrte Dsgn Credit Hours: (3)
- CIVL 7114 - Elastic Stability Credit Hours: (3)
- CIVL 7115 - Plate Shell Struc \*\* Credit Hours: (3)
- CIVL 7116 - Structural Dynamics Credit Hours: (3)
- CIVL 7117 - Finite Elem Struc Mech Credit Hours: (3)
- CIVL 7119 - Earthquake Resist Design \*\* Credit Hours: (3)
- CIVL 7123 - Seismic Risk Assess Credit Hours: (3)
- CIVL 7991 - Projects Credit Hours: (3)
- CIVL 7996 - Thesis Credit Hours: (1-6)

## Retention Policy

All students enrolled in the Department of Civil Engineering are expected to attain high academic achievement in all courses taken. The criteria listed below will be used to determine retention status of students enrolled in the program leading to a Master of Science degree in Civil Engineering.

1. Students having been unconditionally admitted to the graduate program in Civil Engineering who maintain a cumulative grade point average of 3.00 or higher will be considered to be in good standing.
2. Students must maintain a cumulative grade point average of 3.00 in all course work at The University of Memphis, in all Civil Engineering course work at The University of Memphis, and for all 7000 level course work at The University of Memphis at the end of each semester of enrollment. Any student not meeting these conditions will be placed on probation.
3. Students admitted on probation must maintain a 3.00 average at the end of each semester until 9 hours of graduate credit are earned. A student having a cumulative grade point average less than 3.00 at the end of the period described will be dismissed. A student having a cumulative grade point average of 3.00 or above will then be subject to the retention criteria listed in 2 above.
4. A student will be permitted two (2) grades of 2.00 or lower in graduate courses taken at The University of Memphis. A student will be dismissed from the program at the end of the semester in which a third grade of 2.00 or lower is earned.
5. A student who has been dropped from the graduate program in the Department of Civil Engineering will be denied permission to enroll in Civil Engineering courses in semesters subsequent to dismissal from the department.

## Civil Engineering - Transportation Engineering Concentration, (MS)

### MS Degree Program

Please review the information provided on the Herff College of Engineering page.

### Program Admission

The Herff College of Engineering has established uniform admissions criteria for all graduate programs. Exceptions to these requirements may be addressed by the Graduate Admissions and Retention Committee of the department and must be approved by the Dean.

In addition to meeting the University minimum admission requirements, applicants must have:

1. a bachelors degree in engineering or a related science or mathematics program;
2. an undergraduate GPA that is competitive for the students' bachelors program;
3. an acceptable score on the verbal, quantitative, and analytic portions of the GRE;
4. three (3) letters of recommendation from faculty members able to objectively comment on your intellectual and professional achievements and potential.

An applicant who lacks a civil engineering bachelors degree may be required to complete undergraduate deficiency courses. If the number of deficiency courses is large, the applicant may be required to complete an undergraduate degree in civil engineering before seeking admission to the graduate program.

In addition to the above requirements, applicants whose native language is other than English must have a competitive score on the Test of English as a Foreign Language (TOEFL) or The International English Language Testing System (IELTS). Applicants whose highest degree is from an international university may be required to have their credentials (transcripts) evaluated. The department will accept evaluations done by any credentialing agency listed on the National Association of Credential Evaluation Services web site (<http://www.naces.org>). A course-by course report is required.

Applicants are advised that the stated admission requirements are minimum requirements. Meeting the minimum requirements does not guarantee admission into the masters program.

**English Conditional Admission:** International students are required to demonstrate a strong grasp of the English language before admission into the graduate program. English conditional admission may be granted on a case-by-case basis. Students will need to register for an English skills assessment and take instructional sessions (if required as a result of that assessment) through the University's Intensive English for Internationals (IEI) program ([www.memphis.edu/iei](http://www.memphis.edu/iei)). Upon successful completion of the requisite sessions, as determined by IEI, the student's English skills will be considered up to standard and the TOEFL/IELTS requirement may be waived. The student can then proceed into their graduate academic program. Please note that in order to have a complete application packet, students seeking English conditional admission will need to simultaneously apply for the IEI program through the link above and to the Graduate School ([www.memphis.edu/graduateadmissions](http://www.memphis.edu/graduateadmissions)). Please note that a student cannot be a graduate assistant (GA) until they have been fully admitted and have begun their graduate academic program. Students will pay IEI fees until they meet the language criterion. If courses are taken outside of IEI, the student will be charged additional tuition at the regular rate.

## Program Requirements

- Thesis option: 30 credit hours total. Students electing the thesis option will be required to complete an independent research project culminating in a master's thesis. Upon completion of the thesis, the student must successfully pass an oral examination to assess mastery of the thesis topic and to evaluate the student's knowledge in Civil Engineering. **NOTE:** Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.
- Project option: 30 credit hours total. Students electing the project option must take CIVL 7001, CIVL 7012, and CIVL 7993. Upon completion of CIVL 7993, project students must make an oral presentation of their project and pass an oral comprehensive examination to evaluate the student's knowledge in Civil Engineering.
- Course-only option: 30 credit hours total. Students electing the course-only option must take CIVL 7001 and CIVL 7012. In their last semester, they must pass a take-home comprehensive exam covering all of their coursework.
- A minimum of 18 hours of Civil Engineering course work at the 7000 level will be required for all MS degree programs. No more than 9 hours of committee/advisor-approved course work below the 7000 level will be allowed in any program of study. Classes taken outside the department must be approved by the committee/advisor and must complement the student's program of study in Civil Engineering.

## Transportation Engineering:

- CIVL 6155 - Pavement Design and Evaluation Credit Hours: (3)
- CIVL 6162 - Traffic Engineering Credit Hours: (3)
- CIVL 6163 - Airport Plnng & Design Credit Hours: (3)
- CIVL 6164 - Route Location & Design Credit Hours: (3)
- CIVL 6165 - Introduction to Transportation System Management and Operations Credit Hours: 3
- CIVL 7001 - Engineering Analysis Credit Hours: (3)
- CIVL 7162 - Transportation Sys Eval Credit Hours: (3)
- CIVL 7164 - Urban Transport Engr Credit Hours: (3)
- CIVL 7165 - Geom Dsgn Trnsprtn Syst Credit Hours: (3)
- CIVL 7166 - Design Hgwy Airpt Pvmt Credit Hours: (3)
- CIVL 7168 - Traffic Engr Operations Credit Hours: (3)
- CIVL 7169 - Mass Transit Systems Credit Hours: (3)
- CIVL 7261 - Traffic Flow Theory Credit Hours: (3)
- CIVL 7262 - Freight Demand Modeling Credit Hours: (3)
- CIVL 7263 - Intro. to Num. Opt. for Eng \*\* Credit Hours: (3)
- CIVL 7264 - Simulation Modeling Credit Hours: (3)
- CIVL 7265 - Intro to Intermodal Freight Credit Hours: (3)
- CIVL 7266 - Freight Terms and Distr Facils Credit Hours: (3)
- CIVL 7267 - Maritime Economics Credit Hours: (3)
- CIVL 7268 - Transport Network Flows Credit Hours: (3)
- CIVL 7269 - Quant Meth for Engr Dec Making Credit Hours: (3)
- CIVL 7360 - Transp Econ & Decision Making \*\* Credit Hours: (3)
- CIVL 7362 - Port Planning Mgmt & Operation Credit Hours: (3)
- CIVL 7363 - Discr. Choice Model for Transp Credit Hours: (3)
- CIVL 7991 - Projects Credit Hours: (3)
- CIVL 7996 - Thesis Credit Hours: (1-6)

## Retention Policy

All students enrolled in the Department of Civil Engineering are expected to attain high academic achievement in all courses taken. The criteria listed below will be used to determine retention status of students enrolled in the program leading to a Master of Science degree in Civil Engineering.

1. Students having been unconditionally admitted to the graduate program in Civil Engineering who maintain a cumulative grade point average of 3.00 or higher will be considered to be in good standing.
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## Accelerated BS/MS Program

This program allows outstanding undergraduates to earn a bachelor's degree and master's degree in Civil Engineering in as little as five years by taking graduate-level technical electives that will count toward both degree programs. Specifically, students who are selected into this program can satisfy the undergraduate requirement of nine hours of technical electives by taking 6000-level courses that will then be counted toward their graduate degree program. However, any graduate coursework will not apply to the undergraduate GPA.

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## Civil Engineering - Water Resources Engineering Concentration, (MS)

### MS Degree Program

Please review the information provided on the Herff College of Engineering page.

### Program Admission

The Herff College of Engineering has established uniform admissions criteria for all graduate programs. Exceptions to these requirements may be addressed by the Graduate Admissions and Retention Committee of the department and must be approved by the Dean.

In addition to meeting the University minimum admission requirements, applicants must have:

1. a bachelors degree in engineering or a related science or mathematics program;
2. an undergraduate GPA that is competitive for the students' bachelors program;
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An applicant who lacks a civil engineering bachelors degree may be required to complete undergraduate deficiency courses. If the number of deficiency courses is large, the applicant may be required to complete an undergraduate degree in civil engineering before seeking admission to the graduate program.

In addition to the above requirements, applicants whose native language is other than English must have a competitive score on the Test of English as a Foreign Language (TOEFL) or The International English Language Testing System (IELTS). Applicants whose highest degree is from an international university may be required to have their credentials (transcripts) evaluated. The department will accept evaluations done by any credentialing agency listed on the National Association of Credential Evaluation Services web site (<http://www.naces.org>). A course-by course report is required.

Applicants are advised that the stated admission requirements are minimum requirements. Meeting the minimum requirements does not guarantee admission into the masters program.

**English Conditional Admission:** International students are required to demonstrate a strong grasp of the English language before admission into the graduate program. English conditional admission may be granted on a case-by-case basis. Students will need to register for an English skills assessment and take instructional sessions (if required as a result of that assessment) through the University's Intensive English for Internationals (IEI) program ([www.memphis.edu/iei](http://www.memphis.edu/iei)). Upon successful completion of the requisite sessions, as determined by IEI, the student's English skills will be considered up to standard and the TOEFL/IELTS requirement may be waived. The student can then proceed into their graduate academic program. Please note that in order to have a complete application packet, students seeking English conditional admission will need to simultaneously apply for the IEI program through the link above and to the Graduate School ([www.memphis.edu/graduateadmissions](http://www.memphis.edu/graduateadmissions)). Please note that a student cannot be a graduate assistant (GA) until they have been fully admitted and have begun their graduate academic program. Students will pay IEI fees until they meet the language criterion. If courses are taken outside of IEI, the student will be charged additional tuition at the regular rate.

## Program Requirements

- Thesis option: 30 credit hours total. Students electing the thesis option will be required to complete an independent research project culminating in a master's thesis. Upon completion of the thesis, the student must successfully pass an oral examination to assess mastery of the thesis topic and to evaluate the student's knowledge in Civil Engineering. **NOTE:** Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.
- Project option: 30 credit hours total. Students electing the project option must take CIVL 7001, CIVL 7012, and CIVL 7993. Upon completion of CIVL 7993, project students must make an oral presentation of their project and pass an oral comprehensive examination to evaluate the student's knowledge in Civil Engineering.
- Course-only option: 30 credit hours total. Students electing the course-only option must take CIVL 7001 and CIVL 7012. In their last semester, they must pass a take-home comprehensive exam covering all of their coursework.
- A minimum of 18 hours of Civil Engineering course work at the 7000 level will be required for all MS degree programs. No more than 9 hours of committee/advisor-approved course work below the 7000 level will be allowed in any program of study. Classes taken outside the department must be approved by the committee/advisor and must complement the student's program of study in Civil Engineering.

## Water Resources Engineering:

- CIVL 6180 - Adv Hydrology/Hydraulics **Credit Hours: (3)**
- CIVL 6185 - Open-Channel Flow **Credit Hours: 3**
- CIVL 6190 - Water Resources Planning and Management **Credit Hours: (3)**
- CIVL 6211 - Physical Hydrology **Credit Hours: 4**
- CIVL 6341 - Aqueous Geochemistry **Credit Hours: 3**
- CIVL 7133 - Slopes and Embankments **Credit Hours: (3)**
- CIVL 7170 - GW Cont Fate/Transport **Credit Hours: (3)**
- CIVL 7173 - Environmental Geochem **Credit Hours: (3)**
- CIVL 7177 - Quantitative Hydrogeol **Credit Hours: (3)**
- CIVL 7181 - Statistical Hydrol Modl **Credit Hours: (3)**
- CIVL 7185 - Hydraul Open Channels **Credit Hours: (3)**
- CIVL 7191 - Computer Appl Water Res **Credit Hours: (3)**
- CIVL 7192 - River Engineering **Credit Hours: (3)**
- CIVL 7194 - Comp River Hydraulics **Credit Hours: (3)**
- CIVL 7195 - Groundwater Hydraulics **Credit Hours: (3)**

- CIVL 7196 - Urban Drainage **Credit Hours: (3)**
- CIVL 7197 - Ground Water Qual Cntrl **Credit Hours: (3)**
- CIVL 7198 - Computational Methods in Hydraulics and Hydrology **Credit Hours: 3**
- CIVL 7991 - Projects **Credit Hours: (3)**
- CIVL 7996 - Thesis **Credit Hours: (1-6)**
- CIVL 7199 - Ecohydraulics and Ecohydrology **Credit Hours: 3**

## Retention Policy

All students enrolled in the Department of Civil Engineering are expected to attain high academic achievement in all courses taken. The criteria listed below will be used to determine retention status of students enrolled in the program leading to a Master of Science degree in Civil Engineering.

1. Students having been unconditionally admitted to the graduate program in Civil Engineering who maintain a cumulative grade point average of 3.00 or higher will be considered to be in good standing.
2. Students must maintain a cumulative grade point average of 3.00 in all course work at The University of Memphis, in all Civil Engineering course work at The University of Memphis, and for all 7000 level course work at The University of Memphis at the end of each semester of enrollment. Any student not meeting these conditions will be placed on probation.
3. Students admitted on probation must maintain a 3.00 average at the end of each semester until 9 hours of graduate credit are earned. A student having a cumulative grade point average less than 3.00 at the end of the period described will be dismissed. A student having a cumulative grade point average of 3.00 or above will then be subject to the retention criteria listed in 2 above.
4. A student will be permitted two (2) grades of 2.00 or lower in graduate courses taken at The University of Memphis. A student will be dismissed from the program at the end of the semester in which a third grade of 2.00 or lower is earned.
5. A student who has been dropped from the graduate program in the Department of Civil Engineering will be denied permission to enroll in Civil Engineering courses in semesters subsequent to dismissal from the department.

## Accelerated BS/MS Program

This program allows outstanding undergraduates to earn a bachelor's degree and master's degree in Civil Engineering in as little as five years by taking graduate-level technical electives that will count toward both degree programs. Specifically, students who are selected into this program can satisfy the undergraduate requirement of nine hours of technical electives by taking 6000-level courses that will then be counted toward their graduate degree program. However, any graduate coursework will not apply to the undergraduate GPA.

Students are encouraged to begin planning to enter the Accelerated B.S./M.S. program early in their undergraduate career in consultation with their advisor in the Department of Civil Engineering. Students with a minimum GPA of 3.25 may apply for the accelerated program once they have completed 15 credit-hours of 3000-level CIVL course work. In addition to an application form, students must have the recommendation of their undergraduate academic advisor and the concurrence of the department chair and graduate coordinator in the Department of Civil Engineering. In order to remain in the program, students must maintain a GPA of at least 3.25. To continue in the program past the B.S. degree, students must apply for full admission into the Graduate School and the Civil Engineering M.S. program.

## Communication, (MA)

### MA Program

A Master's Degree in Communication from The University of Memphis prepares students for success in the many professional opportunities in this field and success in pursuing a doctoral degree in Communication. Students have a choice of two concentrations: Communication Studies or Film and Video Production.

The Film and Video Production concentration combines technical instruction with courses in both motion picture and traditional communication studies to provide students with the tools and concepts necessary to function in the multifaceted world of audiovisual production. The approach to media practice is broad enough to address the needs of the independent artist, as well as those who seek to enter the industry.

All graduate students must comply with the general requirements of the Graduate School (see Admissions Regulations, Academic Regulations, and Minimum Degree Requirements) as well as the program requirements of the degree being pursued.

## Admissions Criteria

Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point average, personal goals statement, relevant employment history, letters of recommendation, and quality of the applicant's writing sample. The number of students admitted to the MA program will depend on availability of adequate faculty supervision and other department resources. More specific admissions criteria can be found on our department website.

See the Department of Communication website for information on applying.

## Initial Graduate Advising

Before registering for courses beyond nine hours of study, the student will form an MA advisory program committee consisting of three members of the department's graduate faculty. One of these three (who must have full graduate faculty status), by request of the student and the consent of the faculty member, will serve as advisory committee chair.

## Formation and Conduct of Master's Advisory Committee

Role and Duties of MA Advisory Committee Chair and Members: All decisions pertaining to a student's program must be approved by a consensus of the MA advisory committee, including meeting to approve a plan of study and approving the content of independent studies. Changes to the plan of study require advisory committee approval.

## Program Requirements

1. Successful completion of a minimum of 30-33 hours of graduate courses, depending on the degree completion option a student and her/his committee agree on; 70% of the minimum must be at the 7000 level or above.
2. Completion of the degree requires one of the following options; however students in Film and Video Production must complete option C, Culminating Project:
  1. Written and oral comprehensive examination. Students must pass both a written and oral comprehensive exam during or after their last semester of course-work. The student's MA advisory committee must approve the option and is responsible for evaluating the comprehensive examination. A pass on the written examination is necessary for admission to the oral examination. The quality of the comprehensive examination as a whole is determined at completion of the oral examination. Students who elect this option must complete a minimum of 33 hours of graduate courses.
  2. Thesis and oral comprehensive examination. Students who elect this option should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write. On completion of the thesis, the student must successfully complete an oral comprehensive examination, which will include an oral defense of the thesis, administered by the student's MA advisory committee. The thesis, defense, and examination must be acceptable to all members of the advisory committee and recommended to the Graduate School after a successful defense. Students who elect this option must complete a minimum of 30 hours of graduate courses,



of which 3 must be COMM 7996 - Thesis. No more than 3 credits of COMM 7996 - Thesis may count toward the 30 hour minimum

3. Culminating project and oral comprehensive examination. This project must be completed under the supervision of a member of the graduate faculty. The student's MA advisory committee must approve the option, and the student must enroll in at least three credits of COMM 7994 - Culminating Project, during or after the last semester of course work. The culminating project provides an opportunity for students to demonstrate their ability to work independently, as well as their mastery of an area of concentration in an applied form approved by their advisory committee. The project may take one of several forms, including a community-based communication intervention, or in the case of FVP students, a film or video production. On completion of the culminating project, the student must successfully complete an oral comprehensive examination, which will include an oral defense of the project, administered by the student's MA advisory committee. The project, defense, and examination must be acceptable to all members of the student's MA advisory committee. Students who elect this option must complete a minimum of 30 hours of graduate courses, of which 3 must be COMM 7994 - Culminating Project.
3. Communication concentration MA students are required to take COMM 8017 - Introduction to Graduate Studies in Communication and COMM 8321 - Communication Theory. Communication concentration MA students are required to take at least 3 hours of methods courses in the department. Department courses designated as methods are listed on the department's website. Substitutions are allowed with the committee's approval.
4. All students must have competency in two of three core areas: Communication Theory, Rhetorical Theory, or Media Theory. These competencies can be satisfied academically in a variety of ways in consultation with the MA advisory committee.
5. All students with a concentration in Film and Video Production must take three credits of COMM 7892 - Film/Video Production, before beginning their final culminating project.
6. Up to nine hours outside the department may be applied to the minimum hour requirement with the approval of the student's MA advisory committee.
7. Up to six semester hours earned at another institution may be applied to the minimum hour requirement with the approval of the student's MA advisory committee.

## Graduate Assistantships

1. Graduate assistantships are available and are awarded on a competitive basis within the department. Assistantships are normally renewed for one year depending upon the performance of assistantship duties and the progress being made towards a degree.
2. Further details are available on the department website.

## Time Limitation

All requirements for the degree must be completed in 8 calendar years.

## Maintaining Satisfactory Progress

At the end of every semester, the graduate faculty in the Department of Communication evaluates the progress of every MA student in the program. During the review, the graduate faculty also evaluates the performance of GTA/GRA work. For those guidelines refer to the department's website.

For a student to continue in the program, they must maintain satisfactory progress. The student will be judged as NOT making satisfactory progress if:

1. The student's cumulative GPA drops below 3.0 and remains there for more than one semester or nine credit hours.
2. The student has acquired more incompletes than he or she can complete during one semester of normal academic work.
3. The student does not pass comprehensive exams, MA thesis or a special project within two (2) semesters of completing coursework.

Should a student fail to maintain satisfactory progress, the Department Chair, in conjunction with the Graduate Director may begin a termination process as outlined in the graduate catalog (Academic Performance Termination and Appeal). Moreover, students found by the Office of Student Conduct to have committed misconduct will be sanctioned by the University in accordance with the policies contained in the "Code of Student Rights and Responsibilities." In these cases, the Department Chair, in conjunction with the Graduate Director, may also begin a termination process as outlined in the graduate catalog (Academic Performance Termination and Appeal.)

## Departmental MA Guidelines

Additional details and information are available on the department website.

## Computer Science, (MS)

### Master of Science

#### Program Admission and Prerequisites

1. GRE scores.
2. Two letters of recommendation.
3. An undergraduate degree in an appropriate discipline with a minimum GPA of 2.5 (on a 4.0 scale) or equivalent preparation.
4. A score of at least 87 on TOEFL, 6.5 on IELTS, 59 on PTE, or 110 on Duolingo, for students from countries where English is not the primary language. Students with a lower score may still be admitted if their application is strong in other aspects.
5. A statement of purpose.
6. Must have passed at least six of the following seven prerequisite courses (or their equivalents) with a C+ grade or better. Students admitted with a missing prerequisite are required to complete the prerequisite course during their first semester in the program. Prerequisite courses cannot be counted toward graduate program requirements.
  - Calculus 1
  - Calculus 2
  - Linear Algebra
  - Computer Programming
  - Data Structures
  - Discrete Structures / Mathematical Foundations of Computer Science
  - Computer Organization / Architecture

We consider a variety of factors in making admission decisions. The fact that an applicant's credentials meet the minimum admission standards does not entitle an applicant to be admitted.

## Program Requirements

### Coursework Requirements

1. **Graduate Credit Requirement:** Students must complete at least 33 credit hours of graduate coursework in total.
2. **M.S. Core Requirement:** Students must complete the following Core Courses. Students must obtain a grade of B- or better in three of the Core Courses (with the minimum allowable grade for the fourth one being a C-).
  - COMP 7012 - Fndtns/Software Engr
  - COMP 7212 - Operating/Distrib Sys

- COMP 7612 - Foundations of Computing
- COMP 7712 - Algorithms/Prob Solv

## Coursework Limitations

Coursework used to satisfy the degree requirements is also subject to the following restrictions:

1. **Special-Course Credit Limit:** At most 6 credit hours from any combination of **COMP 6901, COMP 6911, COMP 7901, COMP 7980** and/or **COMP 7996**. are allowed.
2. **6000-Level Credit Limit:** At most 6 credit hours of 6000-level courses are allowed.
3. **Excluded Courses:** None of the following courses are allowed: **COMP 6001, COMP 6005, COMP 6014, COMP 6030, COMP 6040, COMP 6270, COMP 6601, COMP 7960/COMP 8960**.

## Coursework-Only, Thesis, and Project Options

- For students taking the coursework-only option, no additional course requirements apply.
- For students taking the thesis option, at least 3 credit hours of COMP 7996 – Thesis are required. Theses must follow the Thesis/Dissertation Preparation Guide.
- For students taking the project option, at least 3 credit hours of COMP 7980 – Master's Project are required.

Students interested in pursuing the thesis or project option should consult with their academic advisor to learn the policies and procedures that apply to that option.

## Transfer Credits

Students who are requesting credit transfer from another graduate program must submit an application during the first semester in the program. The application will be evaluated by the student's advisor and the graduate coordinator in order to determine the number of credits that can be transferred towards completion of the degree requirements. Courses from other departments may also be used to satisfy degree requirements, if relevant and approved by the academic advisor prior to enrollment in the courses. The number of credit hours transferred is limited by the Graduate School.

## Comprehensive Examination

Satisfactory completion of the M.S. Core Requirement is deemed as passing the comprehensive examination.

## Counseling - Addiction Counseling Concentration, (MS)

### MS Degree Program

The Master's degree programs in Counseling prepare entry level counseling professionals with a broad knowledge base in fundamental social/behavioral science (human development, learning and cognition, personality theory, and emerging research on visible ethnic populations and gender differences), counseling and helping skills (individual and group counseling, and assessment), research and evaluation tools, and professional identity, role and function. The concentrations in Clinical Mental Health Counseling and School Counseling are accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP). The Vocational Rehabilitation Counseling concentration is accredited by the Council of Rehabilitation Counseling (CORE).

Program objectives are: (1) comprehension of concepts and theories underlying the profession of counseling; (2) ability to collect, analyze, and interpret individual and group data, and to generate and test hypothesis related to human behavior; (3) ability to effectively counsel in both individual and group settings; (4) ability to formulate, implement, and evaluate appropriate

counseling programs and interventions; (5) ability to understand and demonstrate ethical behavior and the legal and ethical implications of that behavior; and (6) development of sensitivity and understanding of the needs of persons who are culturally different, including the ability to (a) examine attitudes and myths regarding the culturally different client and (b) the sociopolitical forces impacting the culturally different client.

## Program Prerequisites

Students need 6 semester hours of course work at the upper division undergraduate or the graduate level in psychological or cultural foundations.

## Program Admission

Program admission for concentrations in the Counseling program

1. Applicants must apply to the Graduate School and to the program. The Master of Science degree in Counseling is a limited access program; not all eligible candidates are admitted. To be considered for admission, applicants must provide:
  1. official undergraduate and/or graduate transcripts of all academic work completed,
  2. submit a Graduate Record Exam (GRE) score,
  3. complete a program admission application including appropriate goals essay,
  4. provide three letters of academic and/or professional reference,
  5. undergo an interview with the faculty.
2. Deadline for the completion of all admissions requirements is March 1 for the fall semester and October 1 for the spring semester. The program selection committee selects students after all application materials and the personal interview are completed. Program admissions forms are available in the department office.

All college transcripts and test score information should be sent directly to Graduate Admissions.

## Program Requirements

### Counseling Programs

The School Counseling and Vocational Rehabilitation Counseling programs are a minimum of 48 semester hours. Clinical Mental Health Counseling and Clinical Rehabilitation Counseling are 60-semester hour programs. All students are to maintain good standing (3.0 or better cumulative grade point average) and at least a B- in all required courses.

### MS program core (18 hours):

- COUN 7411 - Foundatns of Counseling **Credit Hours: (3)**
- COUN 7531 - Group Counseling Procoss **Credit Hours: (3)**
- COUN 7541 - Theories Counsel & Pers **Credit Hours: (3)**
- COUN 7551 - Assessment Techniques **Credit Hours: (3)**
- COUN 7571 - Clinical Techniques **Credit Hours: (3)**
- EDPR 7521 - Introduction to Research Design and Methodology \*\* **Credit Hours: (3)**

### Addictions Counseling Course Requirements:

- COUN 6783 - Alcohol/Drug Abuse Ser **Credit Hours: (3)**

- COUN 7100 - Theories of Addiction **Credit Hours: 3**
- COUN 7101 - Treatment Planning and Relapse Prevention in Addiction Counseling **Credit Hours: 3**
- COUN 7102 - Process and Behavioral Addictions **Credit Hours: 3**
- COUN 7710 - Addiction Counseling **Credit Hours: 3**

## Other Requirements

1. All programs include clinical components, practica, and internships; each student's effectiveness will be evaluated by faculty and supervisors. Prior to contact with clients in practicum and internship, students are expected to provide evidence of good judgment and appropriate emotional functioning. Final decisions regarding student effectiveness will be predicated upon factors that include course grades, demonstrated clinical competence, personality factors, and any relevant test scores.
2. Comprehensive examination.

## Counseling - Clinical Mental Health Counseling Concentration, (MS)

### MS Degree Program

The Master's degree programs in Counseling prepare entry level counseling professionals with a broad knowledge base in fundamental social/behavioral science (human development, learning and cognition, personality theory, and emerging research on visible ethnic populations and gender differences), counseling and helping skills (individual and group counseling, and assessment), research and evaluation tools, and professional identity, role and function. The concentrations in Clinical Mental Health Counseling and School Counseling are accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP). The Vocational Rehabilitation Counseling concentration is accredited by the Council of Rehabilitation Counseling (CORE).

Program objectives are: (1) comprehension of concepts and theories underlying the profession of counseling; (2) ability to collect, analyze, and interpret individual and group data, and to generate and test hypothesis related to human behavior; (3) ability to effectively counsel in both individual and group settings; (4) ability to formulate, implement, and evaluate appropriate counseling programs and interventions; (5) ability to understand and demonstrate ethical behavior and the legal and ethical implications of that behavior; and (6) development of sensitivity and understanding of the needs of persons who are culturally different, including the ability to (a) examine attitudes and myths regarding the culturally different client and (b) the sociopolitical forces impacting the culturally different client.

### Program Prerequisites

Students need 6 semester hours of course work at the upper division undergraduate or the graduate level in psychological or cultural foundations.

### Program Admission

Program admission for concentrations in the Counseling program

1. Applicants must apply to the Graduate School and to the program. The Master of Science degree in Counseling is a limited access program; not all eligible candidates are admitted. To be considered for admission, applicants must provide:
  1. official undergraduate and/or graduate transcripts of all academic work completed,
  2. submit a Graduate Record Exam (GRE) score,

3. complete a program admission application including appropriate goals essay,
  4. provide three letters of academic and/or professional reference,
  5. undergo an interview with the faculty.
2. Deadline for the completion of all admissions requirements is March 1 for the fall semester and October 1 for the spring semester. The program selection committee selects students after all application materials and the personal interview are completed. Program admissions forms are available in the department office.

All college transcripts and test score information should be sent directly to Graduate Admissions.

## Program Requirements

### Counseling Programs

The School Counseling and Vocational Rehabilitation Counseling programs are a minimum of 48 semester hours. Clinical Mental Health Counseling and Clinical Rehabilitation Counseling are 60-semester hour programs. All students are to maintain good standing (3.0 or better cumulative grade point average) and at least a B- in all required courses.

#### MS program core (18 hours):

- COUN 7411 - Foundatns of Counseling **Credit Hours: (3)**
- COUN 7531 - Group Counseling Procss **Credit Hours: (3)**
- COUN 7541 - Theories Counsel & Pers **Credit Hours: (3)**
- COUN 7551 - Assessment Techniques **Credit Hours: (3)**
- COUN 7571 - Clinical Techniques **Credit Hours: (3)**
- EDPR 7521 - Introduction to Research Design and Methodology \*\* **Credit Hours: (3)**

#### Clinical Mental Health Counseling (42 hours):

- COUN 7561 - Career Counseling **Credit Hours: (3)**
- COUN 7630 - Clinical Mental Health Coun **Credit Hours: (3)**
- COUN 7710 - Addiction Counseling **Credit Hours: 3**
- COUN 7730 - Crisis Intrvntn Coun **Credit Hours: (3)**
- COUN 7750 - Multicultural Counseling **Credit Hours: (3)**
- COUN 7885 - Legal/Eth Issues Coun **Credit Hours: (3)**
- EDPR 7117 - Life-Span Human Dev \*\* **Credit Hours: (3)**
- CPSY 7700 - Intrvntns Mntl Disordrs **Credit Hours: (3)**
  
- COUN 7631 - Pract Mental Health Coun **Credit Hours: (3)** practicum  
and
- COUN 7632 - Intern Cmty/Mntl Hlth **Credit Hours: (4-9)** internship
  
- 6 hours elective

### Other Requirements

1. All programs include clinical components, practica, and internships; each student's effectiveness will be evaluated by faculty and supervisors. Prior to contact with clients in practicum and internship, students are expected to provide

evidence of good judgment and appropriate emotional functioning. Final decisions regarding student effectiveness will be predicated upon factors that include course grades, demonstrated clinical competence, personality factors, and any relevant test scores.

2. Comprehensive examination.

## **Counseling - Clinical Rehabilitation Counseling Concentration, (MS)**

### **MS Degree Program**

The Master's degree programs in Counseling prepare entry level counseling professionals with a broad knowledge base in fundamental social/behavioral science (human development, learning and cognition, personality theory, and emerging research on visible ethnic populations and gender differences), counseling and helping skills (individual and group counseling, and assessment), research and evaluation tools, and professional identity, role and function. The concentrations in Clinical Mental Health Counseling and School Counseling are accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP). The Vocational Rehabilitation Counseling concentration is accredited by the Council of Rehabilitation Counseling (CORE).

Program objectives are: (1) comprehension of concepts and theories underlying the profession of counseling; (2) ability to collect, analyze, and interpret individual and group data, and to generate and test hypothesis related to human behavior; (3) ability to effectively counsel in both individual and group settings; (4) ability to formulate, implement, and evaluate appropriate counseling programs and interventions; (5) ability to understand and demonstrate ethical behavior and the legal and ethical implications of that behavior; and (6) development of sensitivity and understanding of the needs of persons who are culturally different, including the ability to (a) examine attitudes and myths regarding the culturally different client and (b) the sociopolitical forces impacting the culturally different client.

### **Program Prerequisites**

Students need 6 semester hours of course work at the upper division undergraduate or the graduate level in psychological or cultural foundations.

### **Program Admission**

Program admission for concentrations in the Counseling program

1. Applicants must apply to the Graduate School and to the program. The Master of Science degree in Counseling is a limited access program; not all eligible candidates are admitted. To be considered for admission, applicants must provide:
  1. official undergraduate and/or graduate transcripts of all academic work completed,
  2. submit a Graduate Record Exam (GRE) score,
  3. complete a program admission application including appropriate goals essay,
  4. provide three letters of academic and/or professional reference,
  5. undergo an interview with the faculty.
2. Deadline for the completion of all admissions requirements is March 1 for the fall semester and October 1 for the spring semester. The program selection committee selects students after all application materials and the personal interview are completed. Program admissions forms are available in the department office.

All college transcripts and test score information should be sent directly to Graduate Admissions.

### **Program Requirements**

#### **Counseling Programs**

The School Counseling and Vocational Rehabilitation Counseling programs are a minimum of 48 semester hours. Clinical Mental Health Counseling and Clinical Rehabilitation Counseling are 60-semester hour programs. All students are to maintain good standing (3.0 or better cumulative grade point average) and at least a B- in all required courses.

### MS program core (18 hours):

- COUN 7411 - Foundatns of Counseling **Credit Hours: (3)**
- COUN 7531 - Group Counseling Procoss **Credit Hours: (3)**
- COUN 7541 - Theories Counsel & Pers **Credit Hours: (3)**
- COUN 7551 - Assessment Techniques **Credit Hours: (3)**
- COUN 7571 - Clinical Techniques **Credit Hours: (3)**
- EDPR 7521 - Introduction to Research Design and Methodology \*\* **Credit Hours: (3)**

### Clinical Rehabilitation Counseling (42 hours):

- COUN 6901 - Prin/Tech/Rehab Counsel **Credit Hours: (3)**
- COUN 6913 - Med/Psyc Aspects/Rehab **Credit Hours: (3)**
- COUN 6921 - Vocational Dev/Occ Info **Credit Hours: (3)**
- COUN 7630 - Clinical Mental Health Coun **Credit Hours: (3)**
- COUN 7710 - Addiction Counseling **Credit Hours: 3**
- COUN 7750 - Multicultural Counseling **Credit Hours: (3)**
- COUN 7885 - Legal/Eth Issues Coun **Credit Hours: (3)**
- COUN 7912 - Intro Psych Rehab Coun **Credit Hours: (3)**
- CPSY 7700 - Intrvntns Mntl Disordrs **Credit Hours: (3)**
  
- COUN 7941 - Prac In Rehab Counsel **Credit Hours: (3)** practicum  
and
- COUN 7942 - Internshp Rehab Counsel **Credit Hours: (4-9)** internship
  
- EDPR 7117 - Life-Span Human Dev \*\* **Credit Hours: (3)**

### Other Requirements

1. All programs include clinical components, practica, and internships; each student's effectiveness will be evaluated by faculty and supervisors. Prior to contact with clients in practicum and internship, students are expected to provide evidence of good judgment and appropriate emotional functioning. Final decisions regarding student effectiveness will be predicated upon factors that include course grades, demonstrated clinical competence, personality factors, and any relevant test scores.
2. Comprehensive examination.

## Counseling - Marriage, Couple and Family Counseling, (MS)

### MS Degree Program

The Master's degree programs in Counseling prepare entry level counseling professionals with a broad knowledge base in fundamental social/behavioral science (human development, learning and cognition, personality theory, and emerging research



on visible ethnic populations and gender differences), counseling and helping skills (individual and group counseling, and assessment), research and evaluation tools, and professional identity, role and function. The concentrations in Clinical Mental Health Counseling and School Counseling are accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP). The Vocational Rehabilitation Counseling concentration is accredited by the Council of Rehabilitation Counseling (CORE).

Program objectives are: (1) comprehension of concepts and theories underlying the profession of counseling; (2) ability to collect, analyze, and interpret individual and group data, and to generate and test hypothesis related to human behavior; (3) ability to effectively counsel in both individual and group settings; (4) ability to formulate, implement, and evaluate appropriate counseling programs and interventions; (5) ability to understand and demonstrate ethical behavior and the legal and ethical implications of that behavior; and (6) development of sensitivity and understanding of the needs of persons who are culturally different, including the ability to (a) examine attitudes and myths regarding the culturally different client and (b) the sociopolitical forces impacting the culturally different client.

## Program Prerequisites

Students need 6 semester hours of course work at the upper division undergraduate or the graduate level in psychological or cultural foundations.

## Program Admission

Program admission for concentrations in the Counseling program

1. Applicants must apply to the Graduate School and to the program. The Master of Science degree in Counseling is a limited access program; not all eligible candidates are admitted. To be considered for admission, applicants must provide:
  1. official undergraduate and/or graduate transcripts of all academic work completed,
  2. submit a Graduate Record Exam (GRE) score,
  3. complete a program admission application including appropriate goals essay,
  4. provide three letters of academic and/or professional reference,
  5. undergo an interview with the faculty.
2. Deadline for the completion of all admissions requirements is March 1 for the fall semester and October 1 for the spring semester. The program selection committee selects students after all application materials and the personal interview are completed. Program admissions forms are available in the department office.

All college transcripts and test score information should be sent directly to Graduate Admissions.

## Program Requirements:

The proposed concentration would require the completion of 60-credit hours of graduate study. All courses are required. Courses completed within the last five years at an accredited college or university will be considered for transfer on a course-by-course basis.

### Core Courses:

- COUN 7411 - Foundations of Counseling **Credit Hours: (3)**
- COUN 7531 - Group Counseling Process **Credit Hours: (3)**
- COUN 7541 - Theories Counsel & Pers **Credit Hours: (3)**
- COUN 7551 - Assessment Techniques **Credit Hours: (3)**
- COUN 7571 - Clinical Techniques **Credit Hours: (3)**
- EDPR 7521 - Introduction to Research Design and Methodology **\*\* Credit Hours: (3)**

## Marriage, Couple and Family Counseling Concentration:

- COUN 7561 - Career Counseling Credit Hours: (3)
- COUN 7710 - Addiction Counseling Credit Hours: 3
- COUN 7720 - Sys Develp Family Thrpy Credit Hours: (3)
- COUN 7721 - Thry/Tchnqs Fam Thrpy Credit Hours: (3)
- COUN 7722 - Couple Coun/Therapy Credit Hours: (3)
- COUN 7724 - Advanced Marriage, Couple and Family Counseling Credit Hours: 3
- COUN 7725 - Sex Therapy Credit Hours: 3
- COUN 7750 - Multicultural Counseling Credit Hours: (3)
- COUN 7885 - Legal/Eth Issues Coun Credit Hours: (3)
- COUN 7950 - Practicum in Marriage, Couple and Family Counseling Credit Hours: 3
- COUN 7951 - Internship in Marriage, Couple and Family Counseling Credit Hours: 3 (9 hours)
- EDPR 7117 - Life-Span Human Dev \*\* Credit Hours: (3)

## Graduation Requirements:

Students must complete all ten required courses and the one elective with a B average (3.00) or higher, for a total of 60 credit hours. In the semester of graduation, the student must "Apply to Graduate" in the MyMemphis Portal and submit a Master's Degree Candidacy form to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave., Memphis, TN 38152) by the deadline specified by the Graduate School.

## Retention Requirements:

Students in the Marriage, Couple and Family Counseling concentration of our MS program will be required to maintain a minimum overall 3.0 GPA in all graduate work (the same as in our four existing concentrations). Any failure to meet satisfactory progress or to maintain a 3.0 overall GPA may result in referral to a faculty retention committee to assist the student to ensure retention and eventual successful completion of the program.

## Other Requirements

1. All programs include clinical components, practica, and internships; each student's effectiveness will be evaluated by faculty and supervisors. Prior to contact with clients in practicum and internship, students are expected to provide evidence of good judgment and appropriate emotional functioning. Final decisions regarding student effectiveness will be predicated upon factors that include course grades, demonstrated clinical competence, personality factors, and any relevant test scores.
2. Comprehensive examination.

## Counseling - School Counseling Concentration, (MS)

The Master's degree programs in Counseling prepare entry level counseling professionals with a broad knowledge base in fundamental social/behavioral science (human development, learning and cognition, personality theory, and emerging research on diversity and multiculturalism); counseling and helping skills (individual/group counseling and assessment); research and evaluation tools; and professional identity, role, and function. The School Counseling Master's degree program is accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP).

## MS Degree Program

The Master's degree programs in Counseling prepare entry level counseling professionals with a broad knowledge base in fundamental social/behavioral science (human development, learning and cognition, personality theory, and emerging research on diversity and multiculturalism); counseling and helping skills (individual/group counseling and assessment); research and evaluation tools; and professional identity, role, and function. The School Counseling Master's degree program is accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP).

Program objectives are: (1) comprehension of concepts and theories underlying the profession of counseling; (2) ability to collect, analyze, and interpret individual and group data, and to generate and test hypothesis related to human behavior; (3) ability to effectively counsel in both individual and group settings; (4) ability to formulate, implement, and evaluate appropriate counseling programs and interventions; (5) ability to understand and demonstrate ethical behavior and the legal and ethical implications of that behavior; and (6) development of sensitivity and understanding of the needs of persons who are culturally different, including the ability to (a) examine attitudes and myths regarding the culturally different client and (b) the sociopolitical forces impacting the culturally different client.

## Program Prerequisites

Students need 6 semester hours of course work at the upper division undergraduate or the graduate level in psychological or cultural foundations.

## Program Admission

Program admission for concentrations in the Counseling program

1. Applicants must apply to the Graduate School and to the program. The Master of Science degree in Counseling is a limited access program; not all eligible candidates are admitted. To be considered for admission, applicants must provide:
  1. Official undergraduate and/or graduate transcripts of all academic work completed;
  2. Submit a Graduate Record Exam (GRE) score if undergraduate GPA is below 3.5 (strongly recommended);
  3. Complete a program admission application including appropriate goals essay;
  4. Provide three letters of academic and/or professional reference; and
  5. Undergo an interview with the faculty.
2. Deadline for the completion of all admissions requirements is March 1 for the fall semester and October 1 for the spring semester. The program selection committee selects students after all application materials and the personal interviews are completed.

All college transcripts and test score information should be sent directly to Graduate Admissions.

## Program Requirements

### School Counseling Program

The School Counseling program is a 60-62 semester hour program. All students are to maintain good standing (3.0 or better cumulative grade point average) and at least a B- in all required courses.

### MS Program Core (30 hours)

- COUN 7411 - Foundations of Counseling **Credit Hours: (3)**
- COUN 7531 - Group Counseling Process **Credit Hours: (3)**

- COUN 7541 - Theories Counsel & Pers Credit Hours: (3)
- COUN 7551 - Assessment Techniques Credit Hours: (3)
- COUN 7571 - Clinical Techniques Credit Hours: (3)
- COUN 7730 - Crisis Intrvntn Coun Credit Hours: (3)
- COUN 7750 - Multicultural Counseling Credit Hours: (3)
- COUN 7825 - Strategies Career Coun in K-12 \*\* Credit Hours: (3)
- EDPR 7117 - Life-Span Human Dev \*\* Credit Hours: (3)
- EDPR 7521 - Introduction to Research Design and Methodology \*\* Credit Hours: (3)

### School Counseling (21 hours)

- COUN 7542 - Child Counseling, Consultation and Intervention in Schools Credit Hours: (3)
- COUN 7640 - Principles Schl Couns Credit Hours: (3)
- COUN 7740 - Coun Victmzd Chld/Fam Credit Hours: (3)
- COUN 7824 - College Admission Counseling \*\* Credit Hours: (3)
- COUN 7826 - Schl Coun to Close Achvmnt Gap \*\* Credit Hours: (3)
- COUN 7880 - Legal and Ethical Issues in Counseling PK-12 Students Credit Hours: 3  
(or elective if special education or disability course already taken)
- SPED 7000 - Intro Exceptional Learnr \*\* Credit Hours: (3)

### Practicum (3 hours)

- COUN 7650 - School Counseling Practicum Credit Hours: 3

### Internship (6-8 hours)

- COUN 7660 - School Counseling Internship Credit Hours: 4-6

## Notes

Students must have field placements at each level of PK-12 education: elementary, middle, and high school. These requirements can be accomplished through both practicum and internship experiences. Students enrolled in full-time internship (600 hours) will enroll in 6 credit hours. Students enrolled in part-time internship (300 hours) will enroll in 4 credit hours for two semesters.

Students without undergraduate or graduate special education/disability course must take SPED 7000. Students without one year previous school employment must complete a 25 hour orientation to schools experience during their practicum.

Students are also eligible to apply for and enroll in the Certificate in Career and College Counseling as long as they complete those program requirements and may have a placement at the higher education level as long as they meet the PK-12 placement requirements.

## Other Requirements

1. All programs include clinical components, practica, and internships; each student's effectiveness will be evaluated by faculty and supervisors. Prior to contact with clients in practicum and internship, students are expected to provide evidence of good judgment and appropriate emotional functioning. Final decisions regarding student effectiveness will

be predicated upon factors that include course grades, demonstrated clinical competence, professional behavior, and any relevant test scores.

2. Comprehensive examination.

## **Counseling - Vocational Rehabilitation Counseling Concentration, (MS)**

### **MS Degree Program**

The Master's degree programs in Counseling prepare entry level counseling professionals with a broad knowledge base in fundamental social/behavioral science (human development, learning and cognition, personality theory, and emerging research on visible ethnic populations and gender differences), counseling and helping skills (individual and group counseling, and assessment), research and evaluation tools, and professional identity, role and function. The concentrations in Clinical Mental Health Counseling and School Counseling are accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP). The Vocational Rehabilitation Counseling concentration is accredited by the Council of Rehabilitation Counseling (CORE).

Program objectives are: (1) comprehension of concepts and theories underlying the profession of counseling; (2) ability to collect, analyze, and interpret individual and group data, and to generate and test hypothesis related to human behavior; (3) ability to effectively counsel in both individual and group settings; (4) ability to formulate, implement, and evaluate appropriate counseling programs and interventions; (5) ability to understand and demonstrate ethical behavior and the legal and ethical implications of that behavior; and (6) development of sensitivity and understanding of the needs of persons who are culturally different, including the ability to (a) examine attitudes and myths regarding the culturally different client and (b) the sociopolitical forces impacting the culturally different client.

### **Program Prerequisites**

Students need 6 semester hours of course work at the upper division undergraduate or the graduate level in psychological or cultural foundations.

### **Program Admission**

Program admission for concentrations in the Counseling program

1. Applicants must apply to the Graduate School and to the program. The Master of Science degree in Counseling is a limited access program; not all eligible candidates are admitted. To be considered for admission, applicants must provide:
  1. official undergraduate and/or graduate transcripts of all academic work completed,
  2. submit a Graduate Record Exam (GRE) score,
  3. complete a program admission application including appropriate goals essay,
  4. provide three letters of academic and/or professional reference,
  5. undergo an interview with the faculty.
2. Deadline for the completion of all admissions requirements is March 1 for the fall semester and October 1 for the spring semester. The program selection committee selects students after all application materials and the personal interview are completed. Program admissions forms are available in the department office.

All college transcripts and test score information should be sent directly to Graduate Admissions.

### **Program Requirements**

#### **Counseling Programs**

The School Counseling and Vocational Rehabilitation Counseling programs are a minimum of 48 semester hours. Clinical Mental Health Counseling and Clinical Rehabilitation Counseling are 60-semester hour programs. All students are to maintain good standing (3.0 or better cumulative grade point average) and at least a B- in all required courses.

### MS program core (18 hours):

- COUN 7411 - Foundatns of Counseling **Credit Hours: (3)**
- COUN 7531 - Group Counseling Procoss **Credit Hours: (3)**
- COUN 7541 - Theories Counsel & Pers **Credit Hours: (3)**
- COUN 7551 - Assessment Techniques **Credit Hours: (3)**
- COUN 7571 - Clinical Techniques **Credit Hours: (3)**
- EDPR 7521 - Introduction to Research Design and Methodology \*\* **Credit Hours: (3)**

### Vocational Rehabilitation Counseling (30 hours):

- COUN 6901 - Prin/Tech/Rehab Counsel **Credit Hours: (3)**
- COUN 6913 - Med/Psyc Aspects/Rehab **Credit Hours: (3)**
- COUN 6921 - Vocational Dev/Occ Info **Credit Hours: (3)**
- COUN 7750 - Multicultural Counseling **Credit Hours: (3)**
- COUN 7912 - Intro Psych Rehab Coun **Credit Hours: (3)**
- EDPR 7117 - Life-Span Human Dev \*\* **Credit Hours: (3)**
- 3 hours of electives approved by advisor
- COUN 7941 - Prac In Rehab Counsel **Credit Hours: (3)** practicum  
and
- COUN 7942 - Internshp Rehab Counsel **Credit Hours: (4-9)** internship

### Other Requirements

1. All programs include clinical components, practica, and internships; each student's effectiveness will be evaluated by faculty and supervisors. Prior to contact with clients in practicum and internship, students are expected to provide evidence of good judgment and appropriate emotional functioning. Final decisions regarding student effectiveness will be predicated upon factors that include course grades, demonstrated clinical competence, personality factors, and any relevant test scores.
2. Comprehensive examination.

## Counseling, (MS)

### MS Degree Program

The Master's degree programs in Counseling prepare entry level counseling professionals with a broad knowledge base in fundamental social/behavioral science (human development, learning and cognition, personality theory, and emerging research on visible ethnic populations and gender differences), counseling and helping skills (individual and group counseling, and assessment), research and evaluation tools, and professional identity, role and function. The concentrations in Clinical Mental Health Counseling and School Counseling are accredited by the Council for the Accreditation of Counseling and Related

Educational Programs (CACREP). The Vocational Rehabilitation Counseling concentration is accredited by the Council of Rehabilitation Counseling (CORE).

Program objectives are: (1) comprehension of concepts and theories underlying the profession of counseling; (2) ability to collect, analyze, and interpret individual and group data, and to generate and test hypothesis related to human behavior; (3) ability to effectively counsel in both individual and group settings; (4) ability to formulate, implement, and evaluate appropriate counseling programs and interventions; (5) ability to understand and demonstrate ethical behavior and the legal and ethical implications of that behavior; and (6) development of sensitivity and understanding of the needs of persons who are culturally different, including the ability to (a) examine attitudes and myths regarding the culturally different client and (b) the sociopolitical forces impacting the culturally different client.

## Program Prerequisites

Students need 6 semester hours of course work at the upper division undergraduate or the graduate level in psychological or cultural foundations.

## Program Admission

Program admission for concentrations in the Counseling program

1. Applicants must apply to the Graduate School and to the program. The Master of Science degree in Counseling is a limited access program; not all eligible candidates are admitted. To be considered for admission, applicants must provide:
  1. official undergraduate and/or graduate transcripts of all academic work completed,
  2. submit a Graduate Record Exam (GRE) score,
  3. complete a program admission application including appropriate goals essay,
  4. provide three letters of academic and/or professional reference,
  5. undergo an interview with the faculty.
2. Deadline for the completion of all admissions requirements is March 1 for the fall semester and October 1 for the spring semester. The program selection committee selects students after all application materials and the personal interview are completed. Program admissions forms are available in the department office.

All college transcripts and test score information should be sent directly to Graduate Admissions.

## Program Requirements

### Counseling Programs

The School Counseling and Vocational Rehabilitation Counseling programs are a minimum of 48 semester hours. Clinical Mental Health Counseling and Clinical Rehabilitation Counseling are 60-semester hour programs. All students are to maintain good standing (3.0 or better cumulative grade point average) and at least a B- in all required courses.

### MS program core (18 hours):

- COUN 7411 - Foundations of Counseling **Credit Hours: (3)**
- COUN 7531 - Group Counseling Process **Credit Hours: (3)**
- COUN 7541 - Theories Counsel & Pers **Credit Hours: (3)**
- COUN 7551 - Assessment Techniques **Credit Hours: (3)**
- COUN 7571 - Clinical Techniques **Credit Hours: (3)**
- EDPR 7521 - Introduction to Research Design and Methodology **\*\* Credit Hours: (3)**

## Other Requirements

1. All programs include clinical components, practica, and internships; each student's effectiveness will be evaluated by faculty and supervisors. Prior to contact with clients in practicum and internship, students are expected to provide evidence of good judgment and appropriate emotional functioning. Final decisions regarding student effectiveness will be predicated upon factors that include course grades, demonstrated clinical competence, personality factors, and any relevant test scores.
2. Comprehensive examination.

## Creative Writing, (MFA)

### MFA Degree Program

The Master of Fine Arts in Creative Writing provides studies in poetry, fiction, and nonfiction, along with a variety of options for either a studio degree in Creative Writing, or a degree combining work in either the Department of English or other departments in which course work, or independent study, seems particularly pertinent to the student's creative thesis. A book-length thesis of publishable quality is required; it will be directed by a member of the MFA faculty. The MFA requires 48 graduate semester hours, with a 3.00 grade point average in all graduate courses.

### Admission Requirements

1. An overall minimum grade point average of 2.75 at the undergraduate level.
2. An official undergraduate and if applicable graduate transcript sent to Graduate Admissions.
3. A portfolio of published or unpublished writing samples in the applicant's chosen genre (at least 20-25 pages of fiction, 10 poems, or 25 pages of nonfiction), demonstrating a potential for development to a professional standard of writing, should be submitted to the English Graduate Office along with two letters of recommendation and a cover letter stating the candidate's choice of genre and reasons for pursuing the degree. The writing sample will be evaluated by a committee of MFA faculty. The committee will recommend admission of those applicants with the highest demonstrated talent.
4. Students who wish to change genres after being accepted in one genre, even if they are already registered and enrolled in the program, must submit a new portfolio of work in the new genre and be approved by the MFA faculty for admission in the new genre.
5. Bachelor's degree in English or if BA is in another field, twelve (12) semester hours in upper division literature or creative writing courses with a minimum grade point average of 2.75 in these courses.
6. Deadlines: for best consideration apply by March 1 for the following fall semester admission and October 15 for following spring semester. Applications may be considered later but prospective students applying by those dates have first priority.

### MA Credit

Any applicant who holds an MA degree in English may apply up to a maximum of 24 semester hours in English earned for that degree toward the MFA degree, with the approval of the graduate coordinator. A student's advisor will insure that the combination of MA credits and courses taken in the program has appropriate breadth. Credit previously earned at another institution must be presented for evaluation not later than the end of the student's second semester of enrollment.

### Program Requirements



All students must fulfill the 48-hour degree requirement from the Core Requirements in section 1 in combination with one area of specialization under the Additional Requirements in section 2: the Studio Option, the Literary Studies Option, The Creative/Professional Option, the TESL/TEFL Option, or the Cross-Disciplinary Option.

## Core Requirements

### Writing Workshops and Forms Courses

A total of 6 courses (18 hours) required:

Four Workshop courses, at least three of which must be in chosen genre:

- ENGL 7601 - Creative Nonfiction Wkshp **Credit Hours: (3)**
- ENGL 7602 - Fiction Workshop **Credit Hours: (3)**
- ENGL 7603 - Poetry Workshop **Credit Hours: (3)**

One Forms course in chosen genre:

- ENGL 7470 - Forms Creative Nonfict **Credit Hours: (3)**
- ENGL 7471 - Forms Of Fiction **Credit Hours: (3)**
- ENGL 7472 - Forms Of Poetry **Credit Hours: (3)**

One Cross-Genre Course:

For Poetry Students

- ENGL 6610 - Creative Writing/Translation **Credit Hours: (3)**
- ENGL 7470 - Forms Creative Nonfict **Credit Hours: (3)**
- ENGL 7471 - Forms Of Fiction **Credit Hours: (3)**
- ENGL 7601 - Creative Nonfiction Wkshp **Credit Hours: (3)**
- ENGL 7602 - Fiction Workshop **Credit Hours: (3)** for poets

For Fiction and Creative Nonfiction students:

- ENGL 6610 - Creative Writing/Translation **Credit Hours: (3)**
- ENGL 7472 - Forms Of Poetry **Credit Hours: (3)**
- ENGL 7603 - Poetry Workshop **Credit Hours: (3)**

### Cross-Genre Course

ENGL 6610 may serve as a cross-genre course if the focus was on a cross-genre, but the student must submit a portfolio of cross-genre work from the course and get written approval from the Creative Writing Coordinator.

### Creative Writing Colloquium

At least two sections of ENGL 7900 must be taken (6 hours).

## Thesis

NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

- ENGL 7996 - Thesis **Credit Hours: (1-6)** (3 hours)

## Comprehensive Exam

A Comprehensive Exam based on a reading list formed by the student and the student's thesis director.

## Oral Review of Thesis

### Note:

Although it is not a core requirement for the degree, all students receiving a Teaching Assistantship must take ENGL 7003 either before they become a teaching assistant or during their first semester of teaching. It is included as an alternative course in each of the options for additional requirements below.

## Specialization Requirements:

### Studio Option:

7 courses, 21 hours, chosen from the following:

- ENGL 6610 - Creative Writing/Translation **Credit Hours: (3)**
- ENGL 7470 - Forms Creative Nonfict **Credit Hours: (3)**
- ENGL 7471 - Forms Of Fiction **Credit Hours: (3)**
- ENGL 7472 - Forms Of Poetry **Credit Hours: (3)**
- ENGL 7475 - Literary Publishing **Credit Hours: (3)**
- ENGL 7485 - Lit Arts Programming **Credit Hours: (3)**
- ENGL 7601 - Creative Nonfiction Wkshp **Credit Hours: (3)**
- ENGL 7602 - Fiction Workshop **Credit Hours: (3)**
- ENGL 7603 - Poetry Workshop **Credit Hours: (3)**
- ENGL 7604 - Creative Writing Wkshp **Credit Hours: (3)**

### Note:

Students may take, as an alternative to replace up to 3 of these courses, an equivalent number of other courses (of 3 hours each) from other disciplines within the Department of English (this includes ENGL 7003, which is a requirement if the student receives a Teaching Assistantship). Note: as stated in the course descriptions, ENGL 7475 and ENGL 7485 can only be counted for a maximum of 6 hours each toward the degree requirements.

### Literary Studies Option:

7 courses, 21 hours, made up of the following:

At least 9 hours of Literature Courses

At least 3 hours of Theory of Writing and English Language/Linguistics Courses, selected from:

- ENGL 7020-7049 - Special Topics in English **Credit Hours: (3)** through
- ENGL 7003 - Thry/Prac Tchng Comp **Credit Hours: (3)**
- ENGL 7501 - History English Lang \*\* **Credit Hours: (3)**
- ENGL 7511 - Survey of Linguistics \*\* **Credit Hours: (3)** through
- ENGL 7517 - Discourse Analysis **Credit Hours: (3)**
- ENGL 7531 - Theory and History of ESL \*\* **Credit Hours: (3)** through
- ENGL 7537 - Issues in Second Language Reading \*\* **Credit Hours: (3)**
- ENGL 7590 - Appl/Theory Linguistics **Credit Hours: (3)**
- ENGL 7801 - History Composition **Credit Hours: (3)**
- ENGL 7805 - Foundations of Writing Studies **Credit Hours: (3)**

Literary Editing

Up to 6 hours of

- ENGL 7475 - Literary Publishing **Credit Hours: (3)**

Literary Arts Programming

Up to 6 hours of

- ENGL 7485 - Lit Arts Programming **Credit Hours: (3)**

Forms Courses

Up to 9 hours of

- ENGL 6610 - Creative Writing/Translation **Credit Hours: (3)**
- ENGL 7470 - Forms Creative Nonfict **Credit Hours: (3)**
- ENGL 7471 - Forms Of Fiction **Credit Hours: (3)**
- ENGL 7472 - Forms Of Poetry **Credit Hours: (3)**

Creative/Professional Writing Option:

7 courses, 21 hours, made up of the following:

- ENGL 7003 - Thry/Prac Tchng Comp **Credit Hours: (3)**

At least 9 hours of Professional Writing Courses:

- ENGL 6618 - Document Design \*\* **Credit Hours: (3)**
- ENGL 6619 - Web Design/Online Writing \*\* **Credit Hours: (3)**
- ENGL 7013 - Wkshp Hlth Care Writing \*\* **Credit Hours: (3)**
- ENGL 7014 - Wkshp Public Hlth Care Writing \*\* **Credit Hours: (3)**
- ENGL 7805 - Foundations of Writing Studies **Credit Hours: (3)**

- ENGL 7806 - Resch Meth In Writing **Credit Hours: (3)**
- ENGL 7807 - Wksp/Govmt & Corp Wrtg \*\* **Credit Hours: (3)**
- ENGL 7808 - Wksp/Sci & Techn Wrtg \*\* **Credit Hours: (3)**
- ENGL 7809 - Technical Editing \*\* **Credit Hours: (3)**
- ENGL 7818 - Collaborative Writing \*\* **Credit Hours: (3)**

#### Internship

**Note:** Up to 6 hours of ENGL 7811 - Internship Prof Wrtng may be counted toward this requirement. All internships must be pre-approved by the coordinator of the Creative Writing program along with another professor in the student's primary genre.

Up to 6 hours of:

- ENGL 7475 - Literary Publishing **Credit Hours: (3)**

Up to 6 hours of:

- ENGL 7485 - Lit Arts Programming **Credit Hours: (3)**

#### TESL/TEFL Option:

7 courses, 21 hours, made up of the following:

1. 15 hours in the Certificate Program in Teaching English as a Second/Foreign Language (TESL/TEFL), including 12 hours in the certificate core:
  - ENGL 7530 - Field Experience and Practicum in ESL \*\* **Credit Hours: (3-6)**
  - ENGL 7531 - Theory and History of ESL \*\* **Credit Hours: (3)**
  - ENGL 7532 - Principles of Skills Assessment \*\* **Credit Hours: (3)**
  - ENGL 7535 - ESL Grammar \*\* **Credit Hours: (3)**

3 elective hours selected from:

- ENGL 7533 - Methods/Techniques of ESL in K-12 \*\* **Credit Hours: (3)**
- ENGL 7536 - Issues in Second Language Writing \*\* **Credit Hours: (3)**
- ENGL 7537 - Issues in Second Language Reading \*\* **Credit Hours: (3)**
- ENGL 7538 - Cultural Issues in ESL \*\* **Credit Hours: (3)**
- ENGL 6533 - ESL/EFL in Multicultural Settings **Credit Hours: (3)**

6 hours of electives in English, Creative Writing, or Foreign Languages

#### Cross-Disciplinary Option:

7 courses, 21 hours, made up of the following:

1. Up to 9 hours of English courses from any discipline (includes ENGL 7003)
2. At least 12 hours of courses from another department: Art, History, Journalism, Theater, Foreign Languages, or other department in which course work, or independent study, seems particularly pertinent to the student's creative thesis.

Up to 9 of the 21 hours may be fulfilled by independent study in another department and/or internship hours, but all cross-disciplinary courses/independent studies/internships must be pre-approved by the coordinator of the Creative Writing program along with another professor in the student's primary genre. Internships must be of a nature that will allow the student to participate in research that will form the basis of the student's thesis.

#### Note:

Although taking all 12 hours of the cross-disciplinary minimum in only one other department is not required, it is recommended that the student focus primarily on one area or else have a clear rationale for fulfilling the 12-hour minimum in more than one cross-disciplinary area.

## Retention Requirements

Upon entering the MFA program, a student chooses an advisor in his or her concentration. The advisor will monitor the student's progress toward completion of the degree. Each semester the Graduate Studies Committee will examine the academic progress of all students for retention in the program. If a student receives either two C's, one D, or one F grade in any English graduate level course, that student will be subject to review and could be dismissed from the program. In order to remain in good standing, all graduate students must maintain a 3.0 average in all courses. Students who are on academic probation for two consecutive semesters will not be allowed to continue in the program.

## Criminal Justice, (MA)

### MA Degree Program

#### Program Admission

Admission to the program is competitive and is not automatic upon meeting minimum departmental admission requirements. Students are selected from the pool of qualified applicants for the program, and the number of students admitted to the program yearly depends on availability of financial aid and adequate faculty supervision. Applicants admitted to the program typically have at least a grade point average of 3.0 on a 4.0 scale. GRE scores (verbal, quantitative, written analytical) are taken into account in the admissions process. All application material should be received by July 1 for a candidate to be considered for the fall semester and November 1 for the spring semester. Admission for the summer session is not considered. Any student planning to pursue a Graduate Assistantship should apply by March 15 to receive consideration for the Fall semester and October 1 for the Spring semester.

To be considered for admission, the applicant must:

1. Possess a baccalaureate degree from an accredited college or university.
2. Have earned a grade point average of at least 3.00 on a scale of 4.00 and achieved an acceptable score on the GRE. The admissions committee reserves the right to make exceptions for candidates presenting special circumstances.
3. Submit a statement of purpose for graduate study that is no more than one typed single-spaced page in length.
4. Submit a resume or CV.
5. Submit two letters of recommendation.

#### Program Requirements

1. A total of 30 semester hours of graduate work plus the completion and defense of a thesis, or 33 semester hours of graduate work without a thesis with courses taken in both Tool and Foundation Components and successful completion of the Capstone course and Capstone area comprehensive paper. NOTE: Students choosing the thesis option should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

Satisfactory completion of the following core curriculum:

Tool Component: (6 credit hours)

- CJUS 7128 - Research Methods in Criminal Justice\*\* Credit Hours: 3
- CJUS 7129 - Advanced Stat In Cj Credit Hours: (3)
- or
- SUAP 7100 - Public Policy Statistics\*\* Credit Hours: (3)

Foundation Component: (9 credit hours)

- CJUS 7100 - Criminal Justice Administration\*\* Credit Hours: 3 Programs and Policies
- CJUS 7161 - Intervention Strategies \*\* Credit Hours: (3) Changing Organizations and Communities
- CJUS 7541 - Criminological Theory\*\* Credit Hours: 3 Causes of Crime

## Other Requirements

1. Students not previously having successfully completed a statistics course must register for a statistics course from a list approved by the department prior to registering for CJUS 7129 - Advanced Stat In Cj.
2. A minimum of 24 hours of coursework at the 7000 level, including thesis hours.
3. Up to nine hours of coursework may be taken outside the department with prior approval of the graduate coordinator.
4. Students will be allowed no more than six hours of credit toward the degree in non-classroom courses such as internships, individual directed studies, and reading courses.
5. Satisfactory performance in CJUS 7xxx Graduate Capstone course for non-thesis students.
6. Satisfactory performance on the Graduate Capstone areas comprehensive paper covering the major areas of criminology and criminal justice for non-thesis students.

## Retention Requirements

1. All students are required to maintain a GPA of at least 3.00. Should the student's GPA fall below that mark, a period of one semester will be allowed to correct the deficiency. At the discretion of the chair, the coordinator of graduate studies, and the Assistant Vice Provost for Graduate Studies, this period may be extended one additional semester.
2. Any student receiving a grade of D or F in a required course in the core curriculum will be terminated from the program.

## Data Science, (MS)

### Admission Requirements

- A baccalaureate degree with a GPA of at least 3.0.
- An acceptable score on the Graduate Record Examination (GRE) general test (verbal and quantitative) is required from within the past five years. Verbal and quantitative GRE scores at 70% or above are preferred in each area. Applicants already holding an appropriate master's degree, or its professional equivalent may be exempted from the GRE requirement. Other professional school standardized test scores (MCAT, DAT, GMAT, or LSAT) may be substituted for the GRE by applicants who are working toward or who have already earned post-baccalaureate degrees for example, in medicine, dentistry, management, or law. Test scores must be sent directly to Graduate Admissions by the testing agency. The University of Memphis institution code number for reporting ETS scores is R-1459.

- Two letters of recommendation from three individuals (at least one letter from a former professor or instructor) familiar with the applicant's academic background or experience in Computer Science, Statistics, Mathematics and related issues, specifying in detail the applicant's capabilities for graduate study and for future performance as a data scientist, are required.
- Personal statement of approximately 750 to 1,000 words indicating his/her present interests and career goals, including how the MS-DS will prepare the candidate to achieve these goals.

## International Students

For International Students and not native speakers of English there is an English proficiency requirement

- All applicants who will be attending the University on a visa and who are not native speakers of English and are not graduates of the University of Memphis must supply a minimum score of 79 on the internet-based Test of English as a Foreign Language (TOEFL/iBT), 220 on the computer-based test, and 550 on the paper-based test (TOEFL/PBT). The International English Language Testing System (IELTS) will also be acceptable in lieu of the TOEFL with a minimum acceptable score of 6.0.

## Prerequisites

An applicant will be expected to have the necessary mathematical, computational, and statistical background (calculus, linear algebra, programming, introductory probability, and introductory statistics).

## Retention Requirements

Students must earn a grade of B (3.0) or higher in all required courses. The MS program will adhere to Graduate School policy regarding course grades and repetition of courses. All courses applied toward MS degree program requirements must have the advisor's written approval.

## Graduation Requirements

To qualify for graduation, students must meet the following requirements: complete a minimum of 33 semester hours of graduate course work beyond the bachelor's degree. This may include a 3-hour project course or the capstone course (students also have a Master's Thesis option).

## Academic Program Requirements

The Master of Science degree in Data Science requires completion of 33 semester credit hours as follows: 15 credits from the core courses (see below) and 18 credits from the list of electives (with the recommendation that 9 credits must be from a cluster or concentration area – see available clusters at [www.memphis.edu/datascience/programrequirements.php](http://www.memphis.edu/datascience/programrequirements.php) and below) including either a Master's project (3 credits) or a Master's Thesis (6 credits) in which case only 12 credits are needed from the list of electives. Alternatively, students may opt for a Capstone Project course (3 credits) as a way to meet the comprehensive examination requirement of the Graduate School for students who do not write a thesis. Students may choose an Independent Study (3 credits) or Internship (3 credits) and if they opt for a Master's project or the Capstone Project course, only 12 credits are needed from the list of electives.

## Core Courses

- COMP 7150 - Fundamentals of Data Science \*\* Credit Hours: (3)

- COMP 7115 - Database Systems Credit Hours: (3)
- COMP 7745 - Machine Learning \*\* Credit Hours: (3)
- MATH 7635 - Adv Stat Learning I Credit Hours: (3)
- MATH 7636 - Adv Stat Learning II Credit Hours: (3)

## NOTES:

1. COMP 6001 - Computer Programming or equivalent may be taken as a bridge course for those with no or minimal programming background. [intro to programming is also covered in the Fundamentals of Data Science course].
2. MATH 6635 and MATH 6636 or equivalent may be taken as bridge courses for those with little or no statistics background.

List of Electives (students are encouraged to pick at least 3 electives from a cluster or concentration area)

## Core Data Science Cluster (Cluster 1)

COMP 7/8116 - Advanced Database Systems

COMP 7/8118 - Data Mining

COMP 7/8130 - Information Retrieval/Web Search

COMP 7/8740 - Neural Networks

COMP 7/8747 - Advanced Topics in Machine Learning

COMP 7/8780 - Natural Language Processing

MATH 7/8670 - Applied Stochastic Models

MATH 7/8680 - Bayesian Inference

MATH 7/8657 Multivariate Statistics

MATH 7647 Nonparametric Statistics

MATH 7/8660 Applied Time Series Analysis

MATH 7/8685 - Simulation & Computing

MATH 7/8695 - Bootstrap/Other Methods

MATH 7/8759 - Categorical Analysis

ESCI 6515 Geographic Information Science

## Biomedical Cluster (Cluster 2)

BIOL 6490: Introduction to Genomics and Bioinformatics

BIOL 7/8708: Data Science for Biologists

COMP 7/8295: Algorithms in Computational Biology and Bioinformatics

PUBH 7/8104 Large Data Sets



PUBH 7/8205: Special Topics, Mining Data

PUBH 7/8153: Biostatistics in Bioinformatics

PUBH7/8150: Biostatistical Methods I

PUBH7/8152: Biostatistical Methods II

PSYCH 7302/8302: Advanced Statistics for Psychology I

## **Economics Cluster (Cluster 3)**

ECON 7810/8810: Econometrics I (Fundamentals of Econometrics)

ECON 7811/8811: Econometrics II (Panel and limited dependent variable methods, inter alia)

ECON 8812: Econometrics III (Times Series Analysis)

## **Business Information Technology Cluster (Cluster 4)**

MIS 7660 Advanced Data Management

MIS 7621 Business Machine Learning II

MIS 7720 Business Artificial Intelligence

MIS 7710 Web Analytics

## **Engineering Cluster (Cluster 5)**

CIVL 7360 - Transp Econ & Decision Making

CIVL 7012 - Prob Meth In Engr

CIVL 7263 - Intro. to Num. Opt. for Eng.

CIVL 7269 - Quantitative Approaches to Engineering Decision Making

## **Early Childhood Licensure (PreK-3), (MAT)**

### **Master of Arts in Teaching (MAT) Degree Program**

#### **MAT Program Admission**

Applicants must complete admissions requirements to be admitted. **All admissions requirements must be met prior to being admitted into the MAT program.** MAT admission requirements are designed to be both competitive and selective, to be knowledge and performance-based, to be clear and consistent, to maintain diversity, and to meet or exceed undergraduate requirements and minimum state requirements.

To be admitted to the MAT program a candidate must complete an application through the Office of Graduate Admissions which includes an official transcript reflecting an earned bachelor's degree with a 2.75 or higher grade point average from an accredited institution. Applicants with a successful professional career may appeal this grade point average requirement. Documentation of a "successful professional career" is necessary and may include, but is not limited to, items such as an administrators' letter of recommendation, teacher evaluations, lesson plans, teaching video, etc.

## Teacher Education Program (TEP) Admission

1. Students who plan to pursue a graduate program of studies leading to teacher licensure must submit a formal application to the College of Education Teacher Education Program (TEP). Students are encouraged to apply for admission into TEP as soon as they enroll in any College of Education courses.
2. TEP admissions deadlines are September 15 for fall and January 31 for spring.
3. Requirements for provisional admission into TEP include:
  1. A grade point average of 3.25 at the graduate level and undergraduate grade point average of 3.0 or higher;
  2. Pass all sections of the CORE Academic Skills for Educators;
  3. Pass the Praxis II Content Knowledge Exam required by the State of Tennessee for the licensure area being pursued.
  4. TBI Background Check
  5. Completion of teacher aptitude survey
4. Requirements for full admission to TEP must be completed prior to the Clinical Teaching Semester and/or the semester candidates enroll in ICL 7993. They include:
  1. 3.25 graduate grade point average
  2. Passed Praxis II licensure exams

Passing scores on all required Praxis II Licensure Exams for Licensure and Graduation: Candidates participating in the Clinical Teaching Semester and/or ICL 7993 must submit a successful Teacher Performance Assessment (edTPA). Candidates who seek a Practitioner License must have a composite of 3.0 on the Teacher Evaluation used in their employing district.

Students must be provisionally admitted to the Teacher Education Program (TEP) before completing all Level I courses and starting Level II courses. (Level I Professional Core courses provide requisite foundations for teaching and should be completed before taking Level II Professional Specialization courses that focus on specialized strategies for teaching and learning in educational environments).

Students who do not apply to TEP or fail to maintain criteria during the program will not be allowed to continue in the program.

NOTE: MAT admission, TEP admission, and Graduate School admission are separate procedures.

## Program Requirements

Students seeking licensure and the MAT degree must take a minimum of 30-46 graduate semester hours, depending on program and licensure area. Minimum hours may increase depending on licensure requirements. Students who are employed by a school district on a Practitioner License may have the Level III (clinical teaching semester) waived if they provide the necessary documentation to verify one year of successful teaching experience in their area of licensure with a composite Teacher Evaluation Score of 3.0 or higher. Students in this category should contact the Teacher Education Office in 202 Ball Hall for specific requirements. Please note that all initial licensure candidates, including candidates who on a Job-Embedded Practitioners License, must take ICL 7993, either along with clinical teaching semester or the last semester before applying for license if working on a Practitioner License. This course serves as the culminating experience and will require successful completion of the Teacher Performance Assessment (edTPA) to be able to be recommended for licensure.

## Early Childhood Licensure Program Requirements

Students seeking Early Childhood Licensure (PreK-3) and the MAT degree must complete the following requirements:

#### Early Childhood (PreK-3) Level I Licensure Requirements:

- ECED 6510 - Early Child Programs/Practicum **Credit Hours: (3)**
- ICL 7106 - Prof/Eth Prac Inclusive Class **\*\* Credit Hours: (3)**
- SPED 7000 - Intro Exceptional Learners **\*\* Credit Hours: (3)**
- IDT 7061 - Instructional Design & EdTech **\*\* Credit Hours: (3)**

#### Early Childhood Level II and III Licensure Requirements:

- ECED 6520 - Plan/Facilitator Science Learning/Development **Credit Hours: (3)**
- ECED 6530 - Plan/Facilitator Math/Science Learning **Credit Hours: (3)**
- ECED 6540 - Plan/Facilitator Infant/Toddler Development **Credit Hours: (3)**
- ECED 7102 - Observation/Assessment Interview Child Stages **Credit Hours: (3)**
- LITL 7553 - Literacy Development K-4 **\*\* Credit Hours: (3)**
- ICL 7804 - Early Childhood Student Teaching **Credit Hours: (3-9)**
- ICL 7993 - Professional Seminar **\*\* Credit Hours: (3)**

#### Students are required to complete

Students are required to complete a minimum number of structured field experiences during the day in PreK-3 settings prior to clinical teaching semester. These field experiences will be incorporated into courses required for licensure.

#### MAT Degree requirements

MAT Degree requirements in addition to the above: EDPR 7521 and ICL 7993 (Professional Seminar & Teacher Performance Assessment-3 Hours).

- EDPR 7521 - Introduction to Research Design and Methodology **\*\* Credit Hours: (3)**
- ICL 7993 - Professional Seminar **\*\* Credit Hours: (3)**

#### Other Requirements

1. All students seeking teacher licensure must successfully pass clinical teaching semester or must document successful completion of professional experience in lieu of clinical teaching semester.
  1. Students who are employed by a school district on a Practitioner License issued by the State of Tennessee may have the Level III clinical teaching semester waived if they provide the necessary documentation to verify one year of successful teaching experience and composite score of 3 or higher on the Teacher Evaluation used by their employing district. They must also be successful with the Teacher Performance Assessment (edTPA) to be recommended for licensure. Students in this category should contact the Licensure Coordinator for specific requirements.
  2. Students must enroll in the appropriate clinical teaching semester course during clinical teaching semester.
  3. Applications for clinical teaching semester must be filed one semester before clinical teaching semester.
  4. Application for documenting successful completion of professional experience in lieu of clinical teaching semester must be filed at the beginning of the first month of the semester in which the candidate plans to

complete the approved academic program leading to final licensure. The Teacher Performance Assessment (edTPA) must be completed during the semester the candidate on a Practitioner License plans to apply for their Professional License.

2. Licensure in Tennessee requires acceptable scores on specified Praxis II Tests of pedagogy and teaching content knowledge.
3. Validation of methods courses is not permitted.

## Retention

To remain in the Master of Arts in Teaching (MAT) and the Teacher Education Program (TEP) the student must maintain a graduate grade point average of 3.25. Failure to maintain a 3.25 GPA will result in termination of a candidate's TEP status and will result in academic probation in the MAT program.

## Early Childhood/Special Education (PreK-3), (MAT)

The Early Childhood/Special Education-Early Childhood PreK-3 Licensure Program is designed to prepare MAT candidates to work with all young children including children with disabilities and developmental delays (0-8 years) within inclusive, diverse settings.

## Admission Requirements

1. Teacher Education Program – All students must apply for Provisional admission to TEP by the deadline of their first semester of enrollment and fulfill all TEP requirements before the end of that semester. You must have a 3.0 undergraduate gpa to be provisionally admitted to TEP. Full Admission to TEP occurs the semester before you do your clinical teaching semester and requires a 3.25 graduate GPA and all Praxis II exams passed, including the Principles of Learning and Teaching.
2. Licensure Exams- You will have multiple Praxis II exams to take to be fully licensed, check <http://www.memphis.edu/tep/praxis.htm>, click on Praxis and use pulldown menu to find TN required tests. Everyone must take a Principles of Learning and Teaching Praxis II Exam.
3. Capstone Degree and Licensure Requirement. All teacher candidates must complete ICL 7993 - Professional Seminar \*\* to be recommended for licensure and to be awarded the MAT degree. During ICL 7993 each candidate will complete a nationally scored teacher performance assessment called edTPA. Candidates must meet the minimum established score on the edTPA. Failure to do so will result in a delay in your licensure recommendation. If unsuccessful, the candidate is responsible for resubmitting his/her edTPA, including the cost. The edTPA replaces the Masters Project.
4. Candidates must complete all Level One and Level Two courses and must pass all required PRAXIS II exams including the PLT exam prior to enrolling in the ICL 7808 - Clinical Teaching Semester \*\* course and/or ICL 7993.

## Program Requirements

The Early Childhood/Special Education-Early Childhood PreK-3 Licensure Program includes the following existing Early Childhood Education, Special Education, Literacy, ICL, and EDPR courses:

- EDPR 7111 - Child Development & Education \*\* Credit Hours: 3
- LITL 7553 - Literacy Dev K-4 \*\* Credit Hours: (3)
- SPED 6601 - Student Phys/Health Dis Credit Hours: (3)
- ECED 6540 - Pln/Fclt Infnt/Tdlr Dev Credit Hours: (3)
- ECED 7101 - Early Child Teach/Learn Credit Hours: (3)
- SPED 7221 - Behavior Mgmt Spec Ed \*\* Credit Hours: (3)

- ECED 7102 - Obs/Asmt Intsv Chld Stg **Credit Hours: (3)**
- SPED 7121 - Ed Prog Presc Ed/Disbl \*\* **Credit Hours: (3)**
- SPED 7141 - Field Exper Early Child \*\* **Credit Hours: (3-6)**
- ICL 7808 - Clinical Teaching Semester \*\* **Credit Hours: (3-9)**
- ICL 7993 - Professional Seminar \*\* **Credit Hours: (3)**

### Note:

For students who have a job embedded position, 6 hrs. of Clinical Teaching are waived.

## Graduation Requirements

All graduating candidates enrolled in this MAT program of study must successfully complete:

- The 39 credit hours listed in the proposed program of study (including the Clinical Teaching Semester and Professional Seminar)
- Maintain a minimum 3.25 graduate GPA
- Pass the PRAXIS II Exams (Special Education for Knowledge and Application 5354 with a qualifying score of 151; Special Education Preschool Early Childhood 5691 with a qualifying score of 159; and Teaching Reading Elementary Education 5203 with a qualifying score of 162)

## Earth Sciences - Archaeology Concentration, (MS)

### MS Degree Program

Program objectives are: (1) ability to solve advanced Earth Science problems involving observations and measurements in the field and the laboratory; (2) attainment of advanced knowledge of Earth Science concepts and their application in one or more subdisciplines; and (3) preparation for professional employment or for entering a doctoral program in an Earth Science or a related field.

### Program Requirements

A student may be required to make up deficiencies as determined by the student's advisory committee

Completion of at least 3 semester hours of graduate seminar coursework

### Thesis

Completion and successful defense of a thesis (ESCI 7996): at least 6 semester hours. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

- ESCI 7996 - Thesis **Credit Hours: (1-6)**

Completion of

- ESCI 7000 - Art Of Earth Sciences **Credit Hours: (3)**

At Least 1 of the Following Courses:

- ESCI 6515 - Geographic Info Science \*\* **Credit Hours: (3)**
- ESCI 6521 - Quantitative Methods **Credit Hours: (3)**
- ESCI 7310 - Archaeol Theory/Method **Credit Hours: (3)**
- or
- ESCI 7801 - Geog Thought & Mthdly **Credit Hours: (3)**

At least 22 hours of coursework at or above the 7000-level (including thesis), as well as the preparation of an acceptable written thesis proposal and oral presentation of thesis proposal.

Successful completion of a written Comprehensive Examination

**Archaeology Concentration:**

1. Completion of 12 semester hours of archeology graduate coursework. It is recommended that these 12 hours include courses in archaeological theory, methods, and fieldwork.
2. Completion of elective graduate coursework, in consultation with the student's advisory committee, to obtain a minimum total of 32 semester hours.

## **Earth Sciences - Geography Concentration, (MS)**

### **MS Degree Program**

Program objectives are: (1) ability to solve advanced Earth Science problems involving observations and measurements in the field and the laboratory; (2) attainment of advanced knowledge of Earth Science concepts and their application in one or more subdisciplines; and (3) preparation for professional employment or for entering a doctoral program in an Earth Science or a related field.

### **Program Requirements**

A student may be required to make up deficiencies as determined by the student's advisory committee

Completion of at least 3 semester hours of graduate seminar coursework

### **Thesis**

Completion and successful defense of a thesis: at least 6 semester hours.

NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

- ESCI 7996 - Thesis **Credit Hours: (1-6)**

### Completion of:

- ESCI 7000 - Art Of Earth Sciences **Credit Hours: (3)**  
At Least 1 of the Following Courses:
- ESCI 6515 - Geographic Info Science \*\* **Credit Hours: (3)**
- ESCI 6521 - Quantitative Methods **Credit Hours: (3)**
- ESCI 7310 - Archaeol Theory/Method **Credit Hours: (3)**
- ESCI 7801 - Geog Thought & Mthdly **Credit Hours: (3)** (or any upper division 7000 as a replacement for 7801)

At least 22 hours of coursework at or above the 7000-level (including thesis), as well as the preparation of an acceptable written thesis proposal and oral presentation of thesis proposal.

Successful completion of a written Comprehensive Examination

### Geography Concentration:

1. Completion of 12 semester hours of geography (ESCI) graduate coursework. It is recommended that these 12 hours include courses in: environmental and earth sciences; human-economic geography, and geographic techniques. Students not submitting acceptable undergraduate credit in quantitative methods or statistics will be required to take a quantitative methods or statistics course.
2. Completion of elective graduate coursework, in consultation with the student's advisory committee, to obtain a minimum total of 32 semester hours.

## **Earth Sciences - Geology Concentration, (MS)**

### MS Degree Program

Program objectives are: (1) ability to solve advanced Earth Science problems involving observations and measurements in the field and the laboratory; (2) attainment of advanced knowledge of Earth Science concepts and their application in one or more subdisciplines; and (3) preparation for professional employment or for entering a doctoral program in an Earth Science or a related field.

### Program Requirements

A student may be required to make up deficiencies as determined by the student's advisory committee

Completion of at least 3 semester hours of graduate seminar coursework

### Thesis

Completion and successful defense of a thesis: at least 6 semester hours.

NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

- ESCI 7996 - Thesis **Credit Hours: (1-6)**

#### Completion of:

- ESCI 7000 - Art Of Earth Sciences **Credit Hours: (3)**  
At Least 1 of the Following Courses:
- ESCI 6515 - Geographic Info Science \*\* **Credit Hours: (3)**
- ESCI 6521 - Quantitative Methods **Credit Hours: (3)**

At least 22 hours of coursework at or above the 7000-level (including thesis), as well as the preparation of an acceptable written thesis proposal and oral presentation of thesis proposal.

Successful completion of a written Comprehensive Examination

#### Geology Concentration:

1. Completion of 12 semester hours of geology (ESCI) graduate coursework
2. Completion of elective graduate coursework, in consultation with the student's advisory committee, to obtain a minimum total of 32 semester hours.

## **Earth Sciences - Geophysics Concentration, (MS)**

### MS Degree Program

Program objectives are: (1) competence in a common core of material in geophysics that provides the basis for original research; (2) experience in data acquisition and analysis methods, and oral and written presentation of research results; (3) preparation for professional employment in geophysics or for entering a doctoral program.

### Program Admission and Prerequisites

Applicants must apply to both The University of Memphis Graduate School (<http://apply.memphis.edu/>) and CERI (<http://www.memphis.edu/ceri/study/admission.php>). Prospective students, in addition to meeting the requirements for admission to the Graduate School, are required to present as a prerequisite for admission, a satisfactory record of undergraduate work in geophysics or a related field such as physics, engineering, mathematics, geology, or computer science. Normally, mathematics through differential equations will be required. Please see the CERI website for specific admission instructions.

### Program Requirements

#### Course Work Requirements

Thirty two credit hours of graduate credit are required and subject to the following restrictions:

1. No more than 9 credit hours at the 6000 level may be counted toward the degree.
2. A minimum of 12 credit hours must be in courses numbered CERI 7102 - CERI 7405
3. A minimum of one seminar selected from CERI 7701, CERI 7702 or CERI 7703



4. 6 credit hours of CERI 7996 - Thesis also the maximum that can be applied to the 32 hour total
5. No more than 6 credit hours of Independent Study (CERI 7621) can be counted toward the degree

## Comprehensive Examination

A written comprehensive examination will be administered by the student's graduate committee covering course work taken within the program just before the start of the third semester of residence. If the examination is not passed, it may be taken again after one additional semester of residence.

## Thesis Option

A thesis must be submitted that is acceptable to the student's graduate committee. The Thesis can be based upon work done for CERI 7996 - Thesis, for which a maximum of 6 credit hours can be applied to the degree requirement.

## Non-Thesis Option

If a non-thesis program is selected, a student must replace the 6 credit hours of CERI 7996 - Thesis with two additional CERI 7000 level courses. The Thesis is replaced by submission of a paper for publication in a refereed journal, earning 3 credit hours in Independent Study (CERI 7621). Thesis credits CERI 7996 - Thesis do not count toward the non-thesis degree.

## The Advisory Committee

Upon admission, the student will be assigned a temporary committee consisting of three faculty members based upon research interests expressed in the application documents. A permanent advisor and committee must be selected at the start of the first Spring Break for students entering in the fall semester and the start of the first fall semester for students entering in the spring semester.

## Final Oral Examination for the Thesis Option

The student's graduate committee will administer a final oral examination based upon the student's thesis after completion of all other requirements. This examination will be held two weeks after the student has distributed the thesis to the graduate committee and must occur at least one week before the deadline for submission of material to the Graduate School for review. If the oral examination is unsatisfactory, it must be repeated within one year and may not be repeated more than once.

## Retention

A student pursuing the Master's degree may be terminated for any of the following reasons:

1. Failure to maintain a grade point average of 3.0 or above. A student who has a cumulative grade point average below 3.0 will be placed on probation. The Dean of the Graduate School must approve continuation in graduate school. Any person whose continuation is denied may appeal the decision to the University Council for Graduate Studies.
2. Failure to complete the degree requirements within six years of initial enrollment in the graduate program.
3. Failure to pass the Comprehensive Examination.
4. Failure to satisfy the graduate committee on the final oral examination.

## **Earth Sciences - Interdisciplinary Studies Concentration, (MS)**

### MS Degree Program

Program objectives are: (1) ability to solve advanced Earth Science problems involving observations and measurements in the field and the laboratory; (2) attainment of advanced knowledge of Earth Science concepts and their application in one or more subdisciplines; and (3) preparation for professional employment or for entering a doctoral program in an Earth Science or a related field.

## Program Requirements

A student may be required to make up deficiencies as determined by the student's advisory committee

Completion of at least 3 semester hours of graduate seminar coursework

### Thesis

Completion and successful defense of a thesis (ESCI 7996): at least 6 semester hours. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

- ESCI 7996 - Thesis **Credit Hours: (1-6)**

### Completion of

- ESCI 7000 - Art Of Earth Sciences **Credit Hours: (3)**

At Least 1 of the Following Courses:

- ESCI 6515 - Geographic Info Science \*\* **Credit Hours: (3)**
- ESCI 6521 - Quantitative Methods **Credit Hours: (3)**
- ESCI 7310 - Archaeol Theory/Method **Credit Hours: (3)**
- or
- ESCI 7801 - Geog Thought & Mthdly **Credit Hours: (3)**

At least 22 hours of coursework at or above the 7000-level (including thesis), as well as the preparation of an acceptable written thesis proposal and oral presentation of thesis proposal.

Successful completion of a written Comprehensive Examination

### Interdisciplinary Studies Concentration:

1. Completion of 12 semester hours of archaeology, geography, geology or geophysics coursework.
2. Completion of elective graduate coursework, in consultation with the student's advisory committee, to obtain a minimum total of 32 semester hours

## Earth Sciences, (MA)

## MA Degree Program

Program objectives are the attainment and development of depth of the Earth Sciences knowledge, and the ability to apply this knowledge to student's career development, in at least one of the following areas: (1) geography; (2) geology; (3) archaeology; (4) environmental sciences; (5) interdisciplinary studies. Students pursuing an MS degree may not apply to switch to the MA degree until their third year in the Earth Sciences program.

### Program Requirements

1. Students may be required to make up deficiencies as determined by the student's advisory committee.
2. Completion of ESCI 7000, and at least one of the following: ESCI 6515, ESCI 6521, ESCI 7301, ESCI 7310, or ESCI 7801. Additionally, other courses within Earth Sciences and/or outside the department as approved by the advisory committee to total a minimum of 36 graduate credits.
3. Satisfactory completion of 3 credit hours of ESCI 6700 - Earth Science Internship or ESCI 7990 - Research/Earth Science.
4. A minimum of 70% of the total required hours must be 7000 courses. No more than a total of 12 hours of workshop courses and independent study courses may be applied to a Master's degree.
5. Successful completion of a written Comprehensive Examination.
6. Successful completion of a public oral presentation regarding professional experience or internship as it links to the earth sciences.

## Economics, (MA)

### Master of Arts in Economics

#### Program Admission

- Satisfactory performance on the Graduate Record Examination or the Graduate Management Admission Test.
- Satisfactory undergraduate grade point average.
- Successful completion of at least one semester of calculus (MATH 1830, MATH 1910 or equivalent) and at least one semester of statistics (SCMS 2710, MATH 1530 or equivalent).
- Suggested, but not required, additional semesters of calculus (MATH 1920 or equivalent); intermediate microeconomics (ECON 3310 or equivalent) and intermediate macroeconomics (ECON 3320 or equivalent); matrix or linear algebra (MATH 3242 or equivalent).
- International students: satisfactory performance on the Test of English as a Foreign Language (TOEFL) or equivalent.

#### Program Requirements

#### Course Work

33 credit hours of graduate coursework consisting of the following:

**Economics Core (21 credit hours)**

1. ECON 6315
2. ECON 6810
3. ECON 7125
4. ECON 7300
5. ECON 7310
6. ECON 7320
7. ECON 7810

#### **Elective Courses (12 credit hours)**

- Maximum 9 credit hours at the 6000 level, with the rest at the 7000 or 8000 level.
- May be offered by other related departments at the graduate level and must be approved by the MA coordinator.
- Courses in the core MBA curriculum are not eligible.

### **Additional Requirements**

The student must fulfill one of the following requirements:

#### **Examination Option:**

- Each candidate must pass a written examination in economic theory.
- A maximum of two attempts within a year of the first attempt is permitted.

#### **Thesis Option:**

- Each candidate must register for at least 3 (but no more than 6) thesis hours.
- Must write and defend a thesis under the guidance of a faculty committee.
- Must register for thesis credit each academic semester until the thesis is completed.

### **GPA Requirement**

- Students must have a cumulative GPA of 3.0 on all graduate coursework.
- No more than 7 hours of "C+," "C," or "C-" will be counted towards the degree.

## **Educational Psychology and Research, (MS)**

### **MS Degree Programs**

The Master's degree program in Educational Psychology and Research prepares advanced educational practitioners with research skills in the areas of human development, cognitive processes in learning, and educational research methods.

Program objectives are:

1. Ability to conduct basic research in one's own professional field;
2. Preparation for advanced study in educational and social science research;
3. Adaptability to professional and career change.

### **Program Admission**

1. An applicants must submit a completed application packet, including:
  - Online application to the University of Memphis Graduate School,
  - Official transcripts from one's undergraduate and/or graduate studies,

- Official report of Graduate Record Examination (GRE) scores are encouraged but not required,
  - A 500-word statement of purpose, that includes a description of the applicant's career goals and research interests,
  - Three letters of recommendation from three former professors or instructors.
2. Applicants to the MS program are evaluated and admitted two times per academic year. All application information must be received by November 1 for the Spring semester admission, and March 1 for Fall semester admission. Applications from international students are accepted only by March 1 deadline for Fall admission. Late application submissions may be considered on an individual basis, but these will normally be deferred to the following semester. The admission committee may request a personal interview. Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point average, GRE scores, the statement of purpose, relevant employment history, and three letters of recommendation. All admission forms are available online on the Graduate Admissions website.

## Program Requirements

A minimum of 30 semester hours.

### MS program core (12 credits):

EDPR 7521 - Introduction to Research Design and Methodology \*\*

Select one of the following courses:

- EDPR 7541 - Stat Meth App Ed I \*\*
- EDPR 7561 - Qualitative Mthds Educ \*\*

Select one of the following courses:

- EDPR 7121 - Learning & Cognition \*\*
- EDPR 7131 - Cultural Diverse Stdnts \*\*

Select at least one of the following courses:

- EDPR 7112 - Adolescent Development & Educ \*\*
- EDPR 7114 - Psychology Of Aging
- EDPR 7116 - Chldhd Dvlpmnt in Digital Age
- EDPR 7117 - Life-Span Human Dev \*\*

### MS program elective (15 credits):

Students will plan with the major advisor to take other EDPR courses to complete these 15 credit hours, including 3-6 non-EDPR credits.

### Research Project (3 credits):

All MS students are expected to design and complete a research project, EDPR 7000 - Research Project, under direction of their advisors as a culminating experience during their final semester. They should meet with their advisors to select the topic, format, and timeline for their projects.

## Educational Research Certificate Programs

Along with the degree programs, two certificate programs are available: The 12-credit-hour Graduate Certificate in Qualitative Research in Education (GCQRE) and the 15-credit-hour Graduate Certificate in Quantitative Methods (GCQM). Eligible graduate students can earn one or both of the graduate certificates. Eligible students must fall under one of the following categories: (1) They are a non-degree seeking student with a bachelor's degree, or (2) They are currently in a Master's or a doctoral program at the University of Memphis. Students who earn one or both certificates can pursue professional opportunities inclusive of, but not limited to, positions as a data analyst, researcher in the social sciences, research methods instructor, program evaluator, research consultant, and other employment in private and public sectors.

## **Electrical and Computer Engineering - Computer Engineering Concentration, (MS)**

### MS Degree Program

### Admission Requirements

The Herff College of Engineering has established uniform admission criteria for all graduate programs. More information can be found on the department website (<http://www.memphis.edu/eece>).

### Program Requirements

1. Students pursuing the Master of Science in Electrical and Computer Engineering must take EECE 7001, either EECE 7100 or EECE 7251, and elect to pursue either a computer engineering or an electrical engineering concentration (multiple concentrations are not permitted). A student can count a maximum of 6 hours of credit for EECE 7991 and EECE 7992.
  - EECE 7001 - Professional Development **Credit Hours: (3)**
  - EECE 7100 - Linear Sys Analysis **Credit Hours: (3)**
  - or
  - EECE 7251 - Random Signals & Noise \*\* **Credit Hours: (3)**
  - EECE 7991 - Independent Study I **Credit Hours: (1-3)**
  - EECE 7992 - Independent Study II **Credit Hours: (1-3)**

### Computer Engineering Concentration:

9 hours selected from the following courses:

- EECE 7012 - Fndtns/Software Engr **Credit Hours: (3)**
- EECE 7214 - Image Processing **Credit Hours: (3)**
- EECE 7216 - Computer Vision **Credit Hours: (3)**
- EECE 7217 - Multimedia Info Process \*\* **Credit Hours: (3)**
- EECE 7252 - Information Theory **Credit Hours: (3)**
- EECE 7261 - Arch & Design Dig Comp **Credit Hours: (3)**
- EECE 7262 - Logicl Fndtns Artf Intl **Credit Hours: (3)**
- EECE 7266 - Prolog Proc/Intel Syst **Credit Hours: (3)**
- EECE 7267 - Artfcl Intel In Lisp **Credit Hours: (3)**

- EECE 7268 - Obj Oriented Data Engr **Credit Hours: (3)**
  - EECE 7273 - Modern Microprocessors **Credit Hours: (3)**
  - EECE 7720 - Artificial Intelligence **Credit Hours: (3)**
  - EECE 7740 - Neural Networks **Credit Hours: (3)**
- or
- Approved computer engineering special topics courses

## Other Requirements

1. Thesis option: 30 semester hours, including a thesis (6 semester hours). An average grade of 3.00 must be maintained in all Electrical and Computer Engineering graduate coursework. NOTE: Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.
  1. No more than 9 semester hours may be taken outside the department. Advisor's approval is required.
  2. At least 21 hours at the 7000 level are required, of which at least 18 hours must be in Electrical and Computer Engineering.
2. Non-thesis option: 33 semester hours. An average grade of 3.00 must be maintained in all Electrical and Computer Engineering graduate coursework.
  1. No more than 9 semester hours may be taken outside the department. Advisor's approval is required.
  2. Each student will be required to complete EECE 7993.
  3. At least 23 semester hours at the 7000 level required, of which at least 18 hours must be in Electrical and Computer Engineering.
3. Course-only option: 30 semester hours. An average grade of 3.0 must be maintained at all Electrical and Computer Engineering graduate coursework.
  1. No more than 9 semester hours may be taken outside the department. Advisor's approval is required.
  2. At least 21 semester hours at the 7000 level required, of which at least 18 hours must be in Electrical and Computer Engineering.
4. All students are required to pass a comprehensive exam during their last semester.

## Retention Requirements

All students enrolled in the Department of Electrical and Computer Engineering are expected to attain high academic achievement in all courses taken. The criteria listed below will be used to determine retention status of students enrolled in the program leading to a Master of Science degree in Electrical Engineering.

1. Students who maintain a cumulative grade point average of 3.00 ("B") or higher will be considered to be in good standing if no more than 7 hours of "C-," "C" or "C+" or lower have been earned. (See item 3 below and grading system here).
2. Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment in all course work at The University of Memphis, including all Electrical and Computer Engineering course work and all 7000 level course work. Any student not meeting these conditions will be placed on probation by the department.
3. A student will be permitted no more than 7 hours of "C-," "C" or "C+" or lower in graduate courses taken at The University of Memphis. A student will be dismissed at the end of the semester in which a third grade of "C-," "C" or "C+" or lower is earned.
4. Courses applied to the MS degree program requirements must have the advisor's approval.

## Electrical and Computer Engineering - Electrical Engineering Concentration, (MS)

### MS Degree Program

## Admission Requirements

The Herff College of Engineering has established uniform admission criteria for all graduate programs. More information can be found on the department website (<http://www.memphis.edu/eece>).

## Program Requirements

1. Students pursuing the Master of Science in Electrical and Computer Engineering must take EECE 7001, either EECE 7100 or EECE 7251, and elect to pursue either a computer engineering or an electrical engineering concentration (multiple concentrations are not permitted). A student can count a maximum of 6 hours of credit for EECE 7991 and EECE 7992.
  - EECE 7001 - Professional Development **Credit Hours: (3)**
  - EECE 7100 - Linear Sys Analysis **Credit Hours: (3)**
  - or
  - EECE 7251 - Random Signals & Noise \*\* **Credit Hours: (3)**
  - EECE 7991 - Independent Study I **Credit Hours: (1-3)**
  - EECE 7992 - Independent Study II **Credit Hours: (1-3)**

## Electrical Engineering Concentration:

must take 9 hours selected from the following courses:

- EECE 7211 - Adv Elctrmngntc Field **Credit Hours: (3)**
- EECE 7215 - Digital Signal Proc \*\* **Credit Hours: (3)**
- EECE 7230 - Solid State Devices **Credit Hours: (3)**
- EECE 7231 - Communicatn Electronics **Credit Hours: (3)**
- EECE 7232 - Analog Comm Circ Dsgn **Credit Hours: (3)**
- EECE 7233 - Power Electronics **Credit Hours: (3)**
- EECE 7243 - Fourier Optics **Credit Hours: (3)**
- EECE 7245 - Statistical Optics **Credit Hours: (3)**
- EECE 7253 - Wireless Telecommunictn **Credit Hours: (3)**
- EECE 7254 - Modern Telecom **Credit Hours: (3)**
- EECE 7255 - Digital Communications **Credit Hours: (3)**
- EECE 7521 - Adv Control Syst Engr **Credit Hours: (3)**
- EECE 7522 - Stoch/Adapt Cntrl Thry **Credit Hours: (3)**
- EECE 7523 - Thry Optical Cntrl Sys **Credit Hours: (3)**
- EECE 7524 - Parameter Est & Cntrls **Credit Hours: (3)**
- EECE 7269 - Machine Learning & Applicatns **Credit Hours: (3)**
- or
- Approved electrical engineering special topics courses

## Other Requirements



1. Thesis option: 30 semester hours, including a thesis (6 semester hours). An average grade of 3.00 must be maintained in all Electrical and Computer Engineering graduate coursework. NOTE: Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.
  1. No more than 9 semester hours may be taken outside the department. Advisor's approval is required.
  2. At least 21 hours at the 7000 level are required, of which at least 18 hours must be in Electrical and Computer Engineering.
2. Non-thesis option: 33 semester hours. An average grade of 3.00 must be maintained in all Electrical and Computer Engineering graduate coursework.
  1. No more than 9 semester hours may be taken outside the department. Advisor's approval is required.
  2. Each student will be required to complete EECE 7993.
  3. At least 23 semester hours at the 7000 level required, of which at least 18 hours must be in Electrical and Computer Engineering.
3. Course-only option: 30 semester hours. An average grade of 3.0 must be maintained at all Electrical and Computer Engineering graduate coursework.
  1. No more than 9 semester hours may be taken outside the department. Advisor's approval is required.
  2. At least 21 semester hours at the 7000 level required, of which at least 18 hours must be in Electrical and Computer Engineering.
4. All students are required to pass a comprehensive exam during their last semester.

## Retention Requirements

All students enrolled in the Department of Electrical and Computer Engineering are expected to attain high academic achievement in all courses taken. The criteria listed below will be used to determine retention status of students enrolled in the program leading to a Master of Science degree in Electrical Engineering.

1. Students who maintain a cumulative grade point average of 3.00 ("B") or higher will be considered to be in good standing if no more than 7 hours of "C-," "C" or "C+" or lower have been earned. (See item 3 below and grading system here).
2. Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment in all course work at The University of Memphis, including all Electrical and Computer Engineering course work and all 7000 level course work. Any student not meeting these conditions will be placed on probation by the department.
3. A student will be permitted no more than 7 hours of "C-," "C" or "C+" or lower in graduate courses taken at The University of Memphis. A student will be dismissed at the end of the semester in which a third grade of "C-," "C" or "C+" or lower is earned.
4. Courses applied to the MS degree program requirements must have the advisor's approval.

## Electrical and Computer Engineering – No Concentration, (MS)

### MS Degree Program

### Admission Requirements

The Herff College of Engineering has established uniform admission criteria for all graduate programs. More information can be found on the department website (<http://www.memphis.edu/eece>).

### Program Requirements

Students pursuing the Master of Science in Electrical and Computer Engineering must take EECE 7001 and either EECE 7100 or EECE 7251. A student can count a maximum of 6 hours of credit for EECE 7991 and EECE 7992.

- EECE 7001 - Professional Development **Credit Hours: (3)**
- EECE 7100 - Linear Sys Analysis **Credit Hours: (3)**  
or
- EECE 7251 - Random Signals & Noise \*\* **Credit Hours: (3)**
- EECE 7991 - Independent Study I **Credit Hours: (1-3)**
- EECE 7992 - Independent Study II **Credit Hours: (1-3)**

## Other Requirements

1. Thesis option: 30 semester hours, including a thesis (6 semester hours). An average grade of 3.00 must be maintained in all Electrical and Computer Engineering graduate coursework. NOTE: Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.
  1. No more than 9 semester hours may be taken outside the department. Advisor's approval is required.
  2. At least 21 hours at the 7000 level are required, of which at least 18 hours must be in Electrical and Computer Engineering.
2. Non-thesis option: 33 semester hours. An average grade of 3.00 must be maintained in all Electrical and Computer Engineering graduate coursework.
  1. No more than 9 semester hours may be taken outside the department. Advisor's approval is required.
  2. Each student will be required to complete EECE 7993.
  3. At least 23 semester hours at the 7000 level required, of which at least 18 hours must be in Electrical and Computer Engineering.
3. Course-only option: 30 semester hours. An average grade of 3.0 must be maintained at all Electrical and Computer Engineering graduate coursework.
  1. No more than 9 semester hours may be taken outside the department. Advisor's approval is required.
  2. At least 21 semester hours at the 7000 level required, of which at least 18 hours must be in Electrical and Computer Engineering.
4. All students are required to pass a comprehensive exam during their last semester.

## Retention Requirements

All students enrolled in the Department of Electrical and Computer Engineering are expected to attain high academic achievement in all courses taken. The criteria listed below will be used to determine retention status of students enrolled in the program leading to a Master of Science degree in Electrical Engineering.

1. Students who maintain a cumulative grade point average of 3.00 ("B") or higher will be considered to be in good standing if no more than 7 hours of "C-," "C" or "C+" or lower have been earned. (See item 3 below and grading system here).
2. Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment in all course work at The University of Memphis, including all Electrical and Computer Engineering course work and all 7000 level course work. Any student not meeting these conditions will be placed on probation by the department.
3. A student will be permitted no more than 7 hours of "C-," "C" or "C+" or lower in graduate courses taken at The University of Memphis. A student will be dismissed at the end of the semester in which a third grade of "C-," "C" or "C+" or lower is earned.
4. Courses applied to the MS degree program requirements must have the advisor's approval.

## Elementary Licensure (K-5), (MAT)

### Master of Arts in Teaching (MAT) Degree Program

## MAT Program Admission

Applicants must complete admissions requirements to be admitted. **All admissions requirements must be met prior to being admitted into the MAT program.** MAT admission requirements are designed to be both competitive and selective, to be knowledge and performance-based, to be clear and consistent, to maintain diversity, and to meet or exceed undergraduate requirements and minimum state requirements.

To be admitted to the MAT program a candidate must complete an application through the Office of Graduate Admissions which includes an official transcript reflecting an earned bachelor's degree with a 2.75 or higher grade point average from an accredited institution. Applicants with a successful professional career may appeal this grade point average requirement. Documentation of a "successful professional career" is necessary and may include, but is not limited to, items such as an administrators' letter of recommendation, teacher evaluations, lesson plans, teaching video, etc.

## Teacher Education Program (TEP) Admission

1. Students who plan to pursue a graduate program of studies leading to teacher licensure must submit a formal application to the College of Education Teacher Education Program (TEP). Students are encouraged to apply for admission into TEP as soon as they enroll in any College of Education courses.
2. TEP admissions deadlines are September 15 for fall and January 31 for spring.
3. Requirements for provisional admission into TEP include:
  1. A grade point average of 3.25 at the graduate level and undergraduate grade point average of 3.0 or higher;
  2. Pass all sections of the CORE Academic Skills for Educators;
  3. Pass the Praxis II Content Knowledge Exam required by the State of Tennessee for the licensure area being pursued.
  4. TBI Background Check
  5. Completion of teacher aptitude survey
4. Requirements for full admission to TEP must be completed prior to the Clinical Teaching Semester and/or the semester candidates enroll in ICL 7993. They include:
  1. 3.25 graduate grade point average
  2. Passed Praxis II licensure exams

Passing scores on all required Praxis II Licensure Exams for Licensure and Graduation: Candidates participating in the Clinical Teaching Semester and/or ICL 7993 must submit a successful Teacher Performance Assessment (edTPA). Candidates who seek a Practitioner License must have a composite of 3.0 on the Teacher Evaluation used in their employing district.

Students must be provisionally admitted to the Teacher Education Program (TEP) before completing all Level I courses and starting Level II courses. (Level I Professional Core courses provide requisite foundations for teaching and should be completed before taking Level II Professional Specialization courses that focus on specialized strategies for teaching and learning in educational environments).

Students who do not apply to TEP or fail to maintain criteria during the program will not be allowed to continue in the program.

NOTE: MAT admission, TEP admission, and Graduate School admission are separate procedures.

## Program Requirements

Students seeking licensure and the MAT degree must take a minimum of 30-46 graduate semester hours, depending on program and licensure area. Minimum hours may increase depending on licensure requirements. Students who are employed by a school district on a Practitioner License may have the Level III (clinical teaching semester) waived if they provide the necessary documentation to verify one year of successful teaching experience in their area of licensure with a composite Teacher Evaluation Score of 3.0 or higher. Students in this category should contact the Teacher Education Office in 202 Ball Hall for specific requirements. Please note that all initial licensure candidates, including candidates who on a Job-Embedded Practitioner License, must take ICL 7993, either along with clinical teaching semester or the last semester before applying for license if

working on a Practitioner License. This course serves as the culminating experience and will require successful completion of the Teacher Performance Assessment (edTPA) to be able to be recommended for licensure.

## Elementary Licensure Program Requirements

Students seeking Elementary Licensure (K-5) and the MAT degree must complete the following requirements:

### Elementary (K-5) Level I Licensure Requirements:

- ICL 7059 - Models of Instruction \*\* Credit Hours: (3)
- SPED 7000 - Intro Exceptional Learnr \*\* Credit Hours: (3)
- EDPR 7111 - Child Development & Education \*\* Credit Hours: 3
- IDT 7061 - Instructional Design & EdTech \*\* Credit Hours: (3)

### Elementary Early Grades Level II and III Licensure Requirements:

- ICL 7504 - Methods Math Elem Credit Hours: (3)
- ICL 7605 - Methods Elem Science Credit Hours: (3)
- ICL 7654 - Methods Elem Soc Studies Credit Hours: (3)
- ICL 7709 - Urban Lrng Environment Credit Hours: (3)
- LITL 7553 - Literacy Dev K-4 \*\* Credit Hours: (3)
- LITL 7554 - Literacy Dev 5-8 Credit Hours: (3)
- ICL 7806 - Elem Student Tchg Credit Hours: (3-9)
- ICL 7993 - Professional Seminar \*\* Credit Hours: (3)

### Elementary Early Grades students are required

Elementary Early Grades students are required to complete a minimum number of structured field experiences during the day in elementary school settings prior to clinical teaching semester. These field experiences will be incorporated into courses required for licensure.

### MAT Degree requirements

MAT Degree requirements in addition to the above: EDPR 7521 and ICL 7993 (Professional Seminar & Teacher Performance Assessment-3 Hours).

- EDPR 7521 - Introduction to Research Design and Methodology \*\* Credit Hours: (3)
- ICL 7993 - Professional Seminar \*\* Credit Hours: (3)

### Other Requirements

1. All students seeking teacher licensure must successfully pass clinical teaching semester or must document successful completion of professional experience in lieu of clinical teaching semester.
  1. Students who are employed by a school district on a Practitioner License issued by the State of Tennessee may have the Level III clinical teaching semester waived if they provide the necessary documentation to

verify one year of successful teaching experience and composite score of 3 or higher on the Teacher Evaluation used by their employing district. They must also be successful with the Teacher Performance Assessment (edTPA) to be recommended for licensure. Students in this category should contact the Licensure Coordinator for specific requirements.

2. Students must enroll in the appropriate clinical teaching semester course during clinical teaching semester.
  3. Applications for clinical teaching semester must be filed one semester before clinical teaching semester.
  4. Application for documenting successful completion of professional experience in lieu of clinical teaching semester must be filed at the beginning of the first month of the semester in which the candidate plans to complete the approved academic program leading to final licensure. The Teacher Performance Assessment (edTPA) must be completed during the semester the candidate on a Practitioner License plans to apply for their Professional License.
2. Licensure in Tennessee requires acceptable scores on specified Praxis II Tests of pedagogy and teaching content knowledge.
  3. Validation of methods courses is not permitted.

## Retention

To remain in the Master of Arts in Teaching (MAT) and the Teacher Education Program (TEP) the student must maintain a graduate grade point average of 3.25. Failure to maintain a 3.25 GPA will result in termination of a candidate's TEP status and will result in academic probation in the MAT program.

## Engineering Management – Manufacturing Concentration, (MS)

### Engineering Management, (MS)

Engineering management is a discipline that prepares students to plan and manage industrial and commercial enterprises through the application of engineering principles. The MS in Engineering Management provides an opportunity for graduates of BS programs in engineering to prepare themselves for careers as managers. The curriculum provides further technical training for engineers, as well as basic management instruction. Graduates of the Masters of Science in Engineering Management program will be able to:

1. Manage the cost, schedule, risk, and technical aspects of a project.
2. Manage teams and individuals by using basic management, leadership, communication, and interpersonal skills.
3. Use financial information to make decisions.
4. Apply advanced engineering and management knowledge in a relevant area.

### Program Requirements

Satisfactory completion of 30 credit hours of graduate course work and a passing grade on a comprehensive examination, both approved by the department.

#### Core Requirement:

**The following courses are required:**

- TECH 7105 - Project Plan & Scheduling \*\* Credit Hours: (3)
- FIR 7155 - Global Financial Mgmt \*\* Credit Hours: (3)
- ACCT 7080 - Financial/Managerial Acct Mgrs \*\* Credit Hours: (3)

- BA 7501 - Leadership & Negotiation **Credit Hours: 3**

### Electives:

6 hours of electives chosen from graduate engineering courses.

## Retention Requirements

All students enrolled in the Masters of Science in Engineering Management program are expected to attain high academic achievement in all courses taken. The criteria listed below will be used to determine retention status of students enrolled in the program.

1. Students who maintain a cumulative grade point average of 3.00 ("B") or higher will be considered to be in good standing if no more than 7 hours of "C-," "C" or "C+" or lower have been earned.
2. Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment in all course work at The University of Memphis, including all course work for the program, and all 7000 level course work. Any student not meeting these conditions will be placed on probation by the department.
3. A student will be permitted no more than 7 hours of "C-," "C" or "C+" or lower in graduate courses taken at The University of Memphis. A student will be dismissed at the end of the semester in which a third grade of "C-," "C" or "C+" or lower is earned.
4. Courses applied to the MS degree program requirements must have the advisor's approval.

## Graduation Requirements

1. Students must pass a comprehensive exam administered by the program faculty.
2. Students must have an overall 3.0 GPA in courses in the program.

## Concentration in Manufacturing:

- TECH 7015 - App Stat Meth Industry **Credit Hours: (3)**
- TECH 7402 - Adv Quality Control **Credit Hours: (3)**
- TECH 7404 - Wrld/Clas Manfct Concpt \*\* **Credit Hours: (3)**
- TECH 7414 - Manuf Strat/Syst Design \*\* **Credit Hours: (3)**

## Engineering Management – No Concentration (MS)

### Engineering Management, (MS)

Engineering management is a discipline that prepares students to plan and manage industrial and commercial enterprises through the application of engineering principles. The MS in Engineering Management provides an opportunity for graduates of BS programs in engineering to prepare themselves for careers as managers. The curriculum provides further technical training for engineers, as well as basic management instruction. Graduates of the Masters of Science in Engineering Management program will be able to:

1. Manage the cost, schedule, risk, and technical aspects of a project.

2. Manage teams and individuals by using basic management, leadership, communication, and interpersonal skills.
3. Use financial information to make decisions.
4. Apply advanced engineering and management knowledge in a relevant area.

## Program Requirements

Satisfactory completion of 30 credit hours of graduate course work and a passing grade on a comprehensive examination, both approved by the department.

### Core Requirement:

**The following courses are required:**

- TECH 7105 - Project Plan & Scheduling \*\* Credit Hours: (3)
- FIR 7155 - Global Financial Mgmt \*\* Credit Hours: (3)
- ACCT 7080 - Financial/Managerial Acct Mgrs \*\* Credit Hours: (3)
- BA 7501 - Leadership & Negotiation Credit Hours: 3

### Electives:

6 hours of electives chosen from graduate engineering courses.

## Retention Requirements

All students enrolled in the Masters of Science in Engineering Management program are expected to attain high academic achievement in all courses taken. The criteria listed below will be used to determine retention status of students enrolled in the program.

1. Students who maintain a cumulative grade point average of 3.00 ("B") or higher will be considered to be in good standing if no more than 7 hours of "C-," "C" or "C+" or lower have been earned.
2. Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment in all course work at The University of Memphis, including all course work for the program, and all 7000 level course work. Any student not meeting these conditions will be placed on probation by the department.
3. A student will be permitted no more than 7 hours of "C-," "C" or "C+" or lower in graduate courses taken at The University of Memphis. A student will be dismissed at the end of the semester in which a third grade of "C-," "C" or "C+" or lower is earned.
4. Courses applied to the MS degree program requirements must have the advisor's approval.

## Graduation Requirements

1. Students must pass a comprehensive exam administered by the program faculty.
2. Students must have an overall 3.0 GPA in courses in the program.

## Fields of Study

12 hours of technical electives chosen from graduate courses in one of the following fields of study in consultation with an academic advisor.

- Biomedical Engineering
- Civil Engineering
- Electrical and Computer Engineering
- Engineering Technology
- Mechanical Engineering

## **Engineering Management – Transportation Concentration, (MS)**

### **Engineering Management, (MS)**

Engineering management is a discipline that prepares students to plan and manage industrial and commercial enterprises through the application of engineering principles. The MS in Engineering Management provides an opportunity for graduates of BS programs in engineering to prepare themselves for careers as managers. The curriculum provides further technical training for engineers, as well as basic management instruction. Graduates of the Masters of Science in Engineering Management program will be able to:

1. Manage the cost, schedule, risk, and technical aspects of a project.
2. Manage teams and individuals by using basic management, leadership, communication, and interpersonal skills.
3. Use financial information to make decisions.
4. Apply advanced engineering and management knowledge in a relevant area.

### **Program Requirements**

Satisfactory completion of 30 credit hours of graduate course work and a passing grade on a comprehensive examination, both approved by the department.

#### **Core Requirement:**

**The following courses are required:**

- TECH 7105 - Project Plan & Scheduling \*\* Credit Hours: (3)
- FIR 7155 - Global Financial Mgmt \*\* Credit Hours: (3)
- ACCT 7080 - Financial/Managerial Acct Mgrs \*\* Credit Hours: (3)
- BA 7501 - Leadership & Negotiation Credit Hours: 3

#### **Electives:**

6 hours of electives chosen from graduate engineering courses.

### **Retention Requirements**

All students enrolled in the Masters of Science in Engineering Management program are expected to attain high academic achievement in all courses taken. The criteria listed below will be used to determine retention status of students enrolled in the program.



1. Students who maintain a cumulative grade point average of 3.00 ("B") or higher will be considered to be in good standing if no more than 7 hours of "C-," "C" or "C+" or lower have been earned.
2. Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment in all course work at The University of Memphis, including all course work for the program, and all 7000 level course work. Any student not meeting these conditions will be placed on probation by the department.
3. A student will be permitted no more than 7 hours of "C-," "C" or "C+" or lower in graduate courses taken at The University of Memphis. A student will be dismissed at the end of the semester in which a third grade of "C-," "C" or "C+" or lower is earned.
4. Courses applied to the MS degree program requirements must have the advisor's approval.

## Graduation Requirements

1. Students must pass a comprehensive exam administered by the program faculty.
2. Students must have an overall 3.0 GPA in courses in the program.

## Concentration in Transportation:

- CIVL 7360 - Transp Econ & Decision Making \*\* Credit Hours: (3)
- CIVL 7012 - Prob Meth In Engr \*\* Credit Hours: (3)
- CIVL 7263 - Intro. to Num. Opt. for Eng \*\* Credit Hours: (3)
- CIVL 7269 - Quant Meth for Engr Dec Making Credit Hours: (3)

## Engineering Technology, (MS)

### MS Degree Program

### Program Admissions

Admission requirements of the College.

### Program Prerequisites

Applicants must have a bachelor's degree, preferably in an appropriate area of Engineering or Engineering Technology. However, a bachelor's degree in an analytical field with professional experience in a related area is also acceptable.

Candidates with deficiencies in their undergraduate work may be required to pass appropriate undergraduate courses with a C or better to supplement their body of knowledge. Basic competencies are reflected as prerequisites for courses, but may be waived with appropriate professional experience. All programs emphasize technical and analytical aspects that require strong command of math and science. Key competencies that are needed depend on the student's academic goals and possible emphasis areas. Emphasis areas are not required, just used as a guideline. Examples include:

Computer Engineering Technology courses expect students to already have competency in modern programming as well as basic electronics. Deficiencies may require additional preparation and course work. Modern programming using Java can be taken as a graduate course, TECH 6262, which can count toward the MS degree requirements. Basic electronics, however, may require preparation that includes completion of undergraduate course work that cannot be applied toward the MS semester hour requirement.

Similarly, if desiring an emphasis in Electronics Engineering Technology expects a familiarity with fundamentals of electronics prior to enrollment in graduate classes.

Manufacturing Engineering Technology graduate courses expect a familiarity with industrial practices and operations. Course prerequisites are important, but may be fulfilled through experience or completion of appropriate 6000 level courses which may be applied to the MS semester hour requirement.

No more than 9 semester hours of 6000 level course work can be applied toward the MS degree semester-hour requirement.

## Program Requirements

### Non-thesis (Project) option:

A minimum of 33 semester hours. Students selecting the non-thesis option must complete TECH 7991, Projects I, which is included in the 33 semester hour minimum. Projects require a proposal before permits can be issued. Proposals are to provide insight into the scope, depth, and extent of work and how the project relates to coursework that has been completed. Permits must be provided by a graduate faculty member for a section they agree to administer.

- TECH 7991 - Projects I **\*\* Credit Hours: (1-3)**

### Thesis option:

A minimum of 30 semester hours plus a minimum of 6 semester hours of thesis. Students must complete TECH 7996, Thesis, for six semester hours credit. NOTE: Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

- TECH 7996 - Thesis **Credit Hours: (1-6)**

### Each student must complete the following core courses:

#### Statistics:

- TECH 7015 - App Stat Meth Industry **Credit Hours: (3)**

#### Technical writing:

- TECH 7020 - Engineering Technology Communications **\*\* Credit Hours: 3**

#### Leadership:

- TECH 7105 - Project Plan & Scheduling **\*\* Credit Hours: (3)**

A minimum of 21 semester hours must be completed from graduate level courses in the Department of Engineering Technology

Courses taken in other colleges/departments, including those that may be substituted for core courses, cannot apply toward this specified minimum.

## Area of Emphasis

Students may elect to establish an area of emphasis, but this is optional. Courses in each of the three traditional emphasis areas include courses from more than one focal area. Suggested courses in each of the emphasis areas include but are not limited to:

- TECH 6381 - Principles of Supervision **Credit Hours: (3)**
- TECH 6460 - Work Design/Improvement **Credit Hours: (3)**
- TECH 6462 - Quality improvement **Credit Hours: (3)**
- TECH 6464 - Production Control Systems **Credit Hours: (3)**
- TECH 6466 - Facility Design **Credit Hours: (3)**
- TECH 6472 - Computer Aided Design **Credit Hours: (3)**
- TECH 6474 - Automation and Robotics **Credit Hours: (3)**
- TECH 6476 - Computer Aided Manufacturing **Credit Hours: (3)**
- TECH 7401 - Lean Fundamentals \*\* **Credit Hours: (3)**
- TECH 7402 - Adv Quality Control **Credit Hours: (3)**
- TECH 7404 - Wrld/Clas Manfct Concpt \*\* **Credit Hours: (3)**
- TECH 7406 - Material Handling/Auto **Credit Hours: (3)**
- TECH 7408 - Production Processes **Credit Hours: (3)**
- TECH 7414 - Manuf Strat/Syst Design \*\* **Credit Hours: (3)**
- TECH 7801 - Advanced Instrumentation **Credit Hours: (3)**
- TECH 7822 - Ind Press Control Syst **Credit Hours: (3)**

## Other Requirements

### Cross-Disciplinary Academic Experience

Students are encouraged to develop a plan that includes courses outside the department for a more cross-functional academic experience. While prior permission is required, electives can be selected from other departments in Herff College of Engineering and the Fogelman College of Business and Economics or the Department of Computer Science. Acceptable courses depend upon student-selected emphasis area as well as relevance to the student's academic and professional interest. Examples include the following courses by areas of emphasis:

#### Computer Engineering Technology:

- MIS 7605 - Bus Database Systems \*\* **Credit Hours: (3)**
- COMP 7120 - Cryptgrphy/Data Securty **Credit Hours: (3)**
- COMP 7125 - Computer Forensics **Credit Hours: (3)**
- COMP 7150 - Fundamentals of Data Science \*\* **Credit Hours: (3)**

#### Manufacturing Engineering Technology:

- ACCT 7110 - Acct for Decision Making **Credit Hours: (3)**
- SCMS 7110 - Intro to Business Analytics \*\* **Credit Hours: (3)**
- SCMS 7310 - Sem Prod Operatns Mgt **Credit Hours: (3)**

## Restrictions

No more than 9 semester hours of 6000-level courses will count toward the degree. Students cannot receive credit towards graduation for a 6000 level course if they had completed the 4000 cognate of that same course. E.g.: You cannot use TECH 6381 Supervision if you have already completed TECH 4381.

Candidates for the degree must average a 3.0 in all Technology courses

Candidates for the degree must pass a comprehensive examination

1. Comprehensive examinations may be taken by students in good standing during the term in which core and concentration course work are completed. Exams are not given for TECH 7991, TECH 7992, or TECH 7993.
2. The comprehensive written examination will be administered Monday of the tenth week of classes during the fall and spring semesters.
3. A follow-up oral examination is optional with the examining committee.

## Graduate Assistantships

Graduate assistantships will not be awarded to students enrolled in TECH 7993 - Internship In Engr Tech, unless the combined hours of student work is fewer than 20 hours per week.

- TECH 7993 - Internship In Engr Tech **Credit Hours:** (1-3)

## English as a Second Language (ESL) Education (preK-12), (MAT)

### MAT Program Admission

Applicants must complete admissions requirements to be admitted. **All admissions requirements must be met prior to being admitted into the MAT program.** MAT admission requirements are designed to be both competitive and selective, to be knowledge and performance-based, to be clear and consistent, to maintain diversity, and to meet or exceed undergraduate requirements and minimum state requirements.

To be admitted to the MAT program a candidate must complete an application through the Office of Graduate Admissions which includes an official transcript reflecting an earned bachelor's degree with a 2.75 or higher grade point average from an accredited institution. Applicants with a successful professional career may appeal this grade point average requirement. Documentation of a "successful professional career" is necessary and may include, but is not limited to, items such as an administrators' letter of recommendation, teacher evaluations, lesson plans, teaching video, etc.

### Teacher Education Program (TEP) Admission

1. Students who plan to pursue a graduate program of studies leading to teacher licensure must submit a formal application to the College of Education Teacher Education Program (TEP). Students are encouraged to apply for admission into TEP as soon as they enroll in any College of Education courses.
2. TEP admissions deadlines are September 15 for fall and January 31 for spring.
3. Requirements for provisional admission into TEP include:
  1. A grade point average of 3.25 at the graduate level and undergraduate grade point average of 3.0 or higher;
  2. Pass all sections of the CORE Academic Skills for Educators;
  3. Pass the Praxis II Content Knowledge Exam required by the State of Tennessee for the licensure area being pursued.

4. TBI Background Check
5. Completion of teacher aptitude survey
4. Requirements for full admission to TEP must be completed prior to the Clinical Teaching Semester and/or the semester candidates enroll in ICL 7993. They include:
  1. 3.25 graduate grade point average
  2. Passed Praxis II licensure exams

Passing scores on all required Praxis II Licensure Exams for Licensure and Graduation: Candidates participating in the Clinical Teaching Semester and/or ICL 7993 must submit a successful Teacher Performance Assessment (edTPA). Candidates who seek a Practitioner License must have a composite of 3.0 on the Teacher Evaluation used in their employing district.

Students must be provisionally admitted to the Teacher Education Program (TEP) before completing all Level I courses and starting Level II courses. (Level I Professional Core courses provide requisite foundations for teaching and should be completed before taking Level II Professional Specialization courses that focus on specialized strategies for teaching and learning in educational environments).

Students who do not apply to TEP or fail to maintain criteria during the program will not be allowed to continue in the program.

NOTE: MAT admission, TEP admission, and Graduate School admission are separate procedures.

## Program Requirements

Students seeking licensure and the MAT degree must take a minimum of 30-46 graduate semester hours, depending on program and licensure area. Minimum hours may increase depending on licensure requirements. Students who are employed by a school district on a Practitioner License may have the Level III (clinical teaching semester) waived if they provide the necessary documentation to verify one year of successful teaching experience in their area of licensure with a composite Teacher Evaluation Score of 3.0 or higher. Students in this category should contact the Teacher Education Office in 202 Ball Hall for specific requirements. Please note that all initial licensure candidates, including candidates who on a Job-Embedded Practitioners License, must take ICL 7993, either along with clinical teaching semester or the last semester before applying for license if working on a Practitioner License. This course serves as the culminating experience and will require successful completion of the Teacher Performance Assessment (edTPA) to be able to be recommended for licensure.

## Concentration Requirements:

- ENGL 7531 - Theory and History of ESL \*\* Credit Hours: (3)
- ENGL 7533 - Methods/Techniques of ESL in K-12 \*\* Credit Hours: (3)
- ENGL 7535 - ESL Grammar \*\* Credit Hours: (3)
- ENGL 7538 - Cultural Issues in ESL \*\* Credit Hours: (3)

## English, (MA)

### MA in English Degree Program

#### Admission Requirements

An overall minimum grade point average of 3.00 at the undergraduate level is expected.

An official undergraduate and if applicable graduate transcript to Graduate Admissions.

A statement of purpose outlining the student's proposed course of study and career goals

Two letters of recommendation, preferably from college/university professors of English or comparable disciplines.

## Program Prerequisites

An undergraduate degree with a major in English. A student who does not have an undergraduate major in English or appropriate background may be required to complete a maximum of 12 upper division hours in English with a grade of B or higher in each course.

## Program Requirements

1. All students must complete a total of 30 semester hours of course work plus a 3-hour thesis or portfolio, or a total of 33 semester hours of course work.
2. Each graduate teaching assistant in the Department of English must enroll in ENGL 7003/ENGL 8003 before or concurrent with first teaching assignment.

## Concentration Requirements

### Writing and Rhetoric

Students in Writing and Rhetoric must complete 30 hours of course work plus a 3-hour thesis or portfolio. Degree requirements include a 12 hour core consisting of:

- ENGL 7001 - Acad Genre and Sch Pub **Credit Hours: (3)**
- ENGL 7350 - Rhetorical Theory **Credit Hours: (3)**
- ENGL 7805 - Foundations of Writing Studies **Credit Hours: (3)**
- ENGL 7806 - Resch Meth In Writing **Credit Hours: (3)**

### Writing and Rhetoric - Additional Requirements

1. Three graduate courses (9 hours) in Writing, Rhetoric, and Technical Communication.
2. Three graduate elective courses from any department (9 hours) approved by the student's advisor.
3. A thesis or professional portfolio (3 hours).
4. A written comprehensive exam.

### Technical Communication

Students in Technical Communication must complete 30 hours of course work plus a 3-hour portfolio or thesis project. Degree requirements include an 12 hour core consisting of:

- ENGL 6618 - Document Design \*\* **Credit Hours: (3)**
- ENGL 6619 - Web Design/Online Writing \*\* **Credit Hours: (3)**
- ENGL 7809 - Technical Editing \*\* **Credit Hours: (3)**
- ENGL 7818 - Collaborative Writing \*\* **Credit Hours: (3)**

### Technical Communication - Additional Requirements

1. Two graduate courses (6 hours) in Writing, Rhetoric and Technical Communication and/or Applied Linguistics.
2. Four graduate elective courses from any department (12 hours) approved by the student's advisor.

3. A thesis *or* professional portfolio (3 hours).

## Teaching English to Speakers of Other Languages (TESOL)

Students in TESOL must complete 30 hours of course work plus a 3-hour thesis, or 33 hours of course work. Degree requirements include:

1. At least 18 hours of TESOL courses, including ENGL 7531
2. Two graduate courses (6 hours) in a concentration outside TESOL.
3. Two graduate elective courses (6 hours) and a thesis (3 hours); or three graduate elective courses (9 hours).
4. A written comprehensive exam.

## Applied Linguistics

Students in Applied Linguistics must complete 30 hours of course work plus a 3-hour thesis, or 33 hours of course work. Degree requirements include:

1. At least 18 hours of Applied Linguistics courses, including ENGL 7511 or equivalent graduate introduction to linguistics approved by student's advisor.
2. Two graduate courses (6 hours) in a concentration outside Applied Linguistics.
3. Two graduate elective courses (6 hours) and a thesis (3 hours); or three graduate elective courses (9 hours).
4. A written comprehensive exam.
5. Reading knowledge of a foreign language, which may be demonstrated in a variety of ways (inquire in English Graduate Office for options).

## Literature

Students in Literature must complete 30 hours of course work plus a 3-hour thesis, or 33 hours of course work. Degree requirements include:

1. At least 18 hours of Literature courses including ENGL 7000, which should be taken in the first year of graduate study. Students must take at least one literature course from before 1800 and one literature course from after 1800, and at least one Literary Theory class, which may be chosen from any designated theory class, including ENGL 7336/ENGL 8336, ENGL 7701/ENGL 8701, ENGL 7702/ENGL 8702, and ENGL 7480/ENGL 8480.
2. Four graduate elective courses (12 hours) and a thesis (3 hours); or five graduate elective courses (15 hours).
3. A written comprehensive exam.

## Note:

### Reading Knowledge of a Foreign Language

Reading knowledge of a foreign language, which may be demonstrated in a variety of ways (inquire in English Graduate Office for options). Students intending to pursue a PhD are advised to develop a reading competency in at least one of the following: French, German, Latin, or Greek.

## Retention Requirements

1. Students who are on academic probation for two consecutive semesters will not be allowed to continue in the program.
2. Upon entering the MA program, a student chooses an advisor in his or her concentration. The advisor will monitor the student's progress toward completion of the degree. Each semester the Graduate Studies Committee will examine the academic progress of all students for retention in the program.

3. If a student receives either two C's, one D, or one F grade in any English graduate level course, that student will be subject to review and could be dismissed from the program. In order to remain in good standing, all graduate students must maintain a 3.0 average in English Department courses.

## General Psychology, (MS)

### Masters Degree in General Psychology (MSGP)

#### Program Admission and Prerequisites

All application information must have been received by May 1 for a candidate to be considered for admission to the MS degree program in General Psychology. The following items are required for consideration for admission:

1. A completed application form accessed at: Graduate Admissions Apply
2. An official transcript of *all* undergraduate and graduate coursework must be sent. An undergraduate grade point average of at least 2.5/4.0 is required for admission without special permission. GRE scores (Verbal, Quantitative, and Written Analytical).
3. GRE scores are not required and should not be submitted.
4. Letters of recommendation from at least three persons familiar with the applicant's academic background and aptitude for graduate work in Psychology.
5. Applicants must have at least 12 undergraduate hours in psychology, including a course in statistics.
6. Applications to the MS in General Psychology program are considered once a year, to make decisions about enrollment for the following fall semester.
7. Further information about applying may be found at: <https://www.memphis.edu/psychology/graduate/apply.php>.

#### Program Requirements

Admission to the MS in General Psychology program does not require a student to take any minimum number of credits per semester. The only constraint upon the pace at which the student pursues the degree is that credits more than six years old may not be counted toward the degree.

#### All students in the MS in General Psychology program

All students in the MS in General Psychology program must be in good academic standing at the end of 15 credit hours of graduate work in order to continue in the program.

- PSYC 7301 - Research Design & Meth Credit Hours: (3) or equivalent
- PSYC 7302 - Adv Statistics Psych I Credit Hours: (3) or equivalent

At least two of the following:

- PSYC 7000 - History/System Psyc Credit Hours: (1)
- PSYC 7207 - Developmental Psyc Credit Hours: (3)
- PSYC 7217 - Social Psychology Credit Hours: (3)
- PSYC 7219 - Soc/Persnlty Devel Credit Hours: (3)
- PSYC 7222 - Psychology Human Memory Credit Hours: (3)
- PSYC 7407 - Cognition & Emotion Credit Hours: (3)
- PSYC 7412 - Psychopathology Credit Hours: (3)



- PSYC 7416 - Child Psychopathology Credit Hours: (3)
- PSYC 7440 - Behavioral Medicine I Credit Hours: (3)
- PSYC 7701 - Behavioral Neuroscience Credit Hours: (3)
- PSYC 7705 - Neuropsychopharmacology Credit Hours: (3)
- PSYC 7800 - Intro School Psychology Credit Hours: (3)

## Other Requirements

1. During the first year in the program, it is expected that the student will, in consultation with the program director or major professor, have decided on goals and objectives for the remainder of the course of study. Courses that fit these goals and objectives may be in Psychology or other departments in the university. Students who are not in good academic standing at this time must institute an appeal with supporting letters to the program director and the MS in General Psychology committee for consideration of continuance in the program. Such cases will be considered on an individual basis. Also, for both semesters in the first year, all MS in General Psychology students must attend weekly colloquium series to acquaint them with issues of research and professional ethics and professional opportunities in the department and in the discipline.
2. A total approved program of 33 credit hours if the student elects to do a thesis, or 36 credit hours with a Specialty Review Paper. Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write. Students electing to write a specialty review paper should familiarize themselves with the guidelines for this paper, available in the Psychology graduate handbook.
3. For students not conducting a thesis, a specialty review paper covering the student's area(s) of focus will be completed during the last semester in the program.

## Health Studies - Exercise Nutrition, (MS)

### MS Degree Program

Program objectives are: (1) to recognize the diverse nature of subject matter embodied in the respective program disciplines; (2) to understand the research findings and theoretical constructs undergirding the corresponding disciplines within the health studies umbrella, including the development of specialized skills needed for systematic inquiry; (3) to understand the critical role of diversity in delivering inclusive health studies services; (4) to develop effective leadership skills; and (5) to understand and embrace ethical standards of the respective disciplines.

### Admission Requirements and Program Prerequisites

1. Prospective students must apply through the Graduate School creating a login to fill out the application and submit transcripts. Submission of an official report of Graduate Record Examination (GRE) or PRAXIS II exam (for Physical Education Teacher Education only) scores is optional.
2. An applicant must upload the following in Slate:
  - Two letters of recommendation,
  - A 300-500 word statement of goals including identification of the intended area of concentration.
3. Although exceptions may be considered, an applicant is normally expected to have graduated with a minimum baccalaureate GPA of 2.75.
4. Completion of an appropriate undergraduate major and a strong background in discipline-specific courses:
  - Exercise Nutrition: anatomy and physiology, biology, chemistry, exercise physiology, health sciences, structural kinesiology, and nutrition
  - Exercise, Sport and Movement Sciences: anatomy and physiology, health sciences, exercise physiology, structural kinesiology, biomechanics, and motor learning/control
  - Health Promotion: nutrition, biology, exercise physiology, health sciences, structural kinesiology, and psychology

- Physical Education Teacher Education: structural kinesiology, anatomy and physiology, biology, exercise physiology, health sciences, motor learning/control, nutrition, and sport psychology

5. Completion of undergraduate coursework deemed by the concentration committee as a prerequisite to graduate courses. Student admissions to the respective master's programs within the Health Studies (HS) major are differentially restricted to enable Graduate Faculty within each concentration to closely mentor their students. To ensure maximum consideration for admission into a specific HS master's concentration, the following dates are provided: May 1 for summer and fall and November 1 for the spring semester. The admission committee may request a personal interview. Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point average, personal goals statement, relevant employment history, and letters of recommendation. Submission of scores for standardized tests such as the GRE and PRAXIS II are not required.

## Program Requirements

A minimum of 30 hours is required for the major although respective concentrations may require additional credit hours.

### Program Research Core (6 hours):

- HMSE 7010 - Research Methods in Health Sciences \*\* Credit Hours: (3)  
and
- EDPR 7541 - Stat Meth App Ed I \*\* Credit Hours: (3)  
or
- EDPR 7561 - Qualitative Mthds Educ \*\* Credit Hours: (3)  
or
- PUBH 7150 - Biostatistical Methods I \*\* Credit Hours: (3)

### Concentration Required Courses (12 hours)

- ESMS 7201 - Phys Exer Musculoskltl\*\* Credit Hours: (3)
- ESMS 7202 - Phys Ex Mtbolc/Cardresp\*\* Credit Hours: (3)
- NUTR 7412 - Cellular Nutrition I\*\* Credit Hours: (3)
- NUTR 7422 - Cellular Nutrition II\*\* Credit Hours: (3)

Elective Courses (12 hours) Choose from the following courses or other courses with approval of advisor

- ESMS 6603 - Adv Meth Strength Cond Credit Hours: (3)
- ESMS 7020 - Pub/Prop in Health & Biomed\*\* Credit Hours: (3)
- ESMS 7300 - Morphological Foundations of Strength Development\*\* Credit Hours: (3)
- ESMS 7902-7911 - Special Topics Exercise, Sport and Movement Science\*\* Credit Hours: 1-3
- NUTR 7000 - Sport Nutrition \*\* Credit Hours: (3)
- NUTR 7001 - Nutraceuticals and Dietary Sup \*\* Credit Hours: (3)
- NUTR 7002 - Exer & Nutrition Immunology \*\* Credit Hours: (3)
- NUTR 7212 - Appl Nutr for Health Credit Hours: (3)
- NUTR 7452 - Comparative Digestion/Nutr Credit Hours: (3)
- NUTR 7902-11 Special Topics in Nutrition Science

- ELC 7000 Experimental Learning Credit will also be considered for possible use as elective hours.

## Culminating Experience

For graduation from the program, a written comprehensive exam covering all required coursework must be successfully completed. The exam may be taken no sooner than the semester during which the final hours of the program are being taken.

## Other Requirements

1. Successful completion of a comprehensive examination is required.
  1. HPRO 7950 requires successful completion of a committee-approved applied project under the direction of the major professor that culminates in a formal write-up, presentation, and oral comprehensive exam covering the Health Studies core and required coursework in the HPRO concentration.
  2. The Advisor-Approved Elective option requires successful completion of both the advisor-approved course and a written comprehensive exam covering the Health Studies core and required coursework in the HPRO concentration.
2. Consult the Graduation Information webpage on the Graduate School website for information pertaining to the submission of comprehensive exam results and when to "Apply to Graduate" in the MyMemphis Portal.

## Program Retention Policy

All MS degree students are regularly monitored for completion of any entry-level deficiencies by graduate faculty.

Program retention committees, comprised of selected graduate faculty within the corresponding programs of study, monitor the academic progress of all MS degree candidates in the respective programs. Each committee determines whether the student is making sufficient progress and, in case of deficiencies, may recommend additional work or the dismissal of the student from the program. For any student recommended for dismissal, an appeals process is available.

## **Health Studies - Exercise, Sport and Movement Sciences Concentration, (MS)**

### MS Degree Program

Program objectives are: (1) to recognize the diverse nature of subject matter embodied in the respective program disciplines; (2) to understand the research findings and theoretical constructs undergirding the corresponding disciplines within the health studies umbrella, including the development of specialized skills needed for systematic inquiry; (3) to understand the critical role of diversity in delivering inclusive health studies services; (4) to develop effective leadership skills; and (5) to understand and embrace ethical standards of the respective disciplines.

## Admission Requirements and Program Prerequisites

1. Prospective students must apply through the Graduate School creating a login to fill out the application and submit transcripts. Submission of an official report of Graduate Record Examination (GRE) or PRAXIS II exam (for Physical Education Teacher Education only) scores is optional.
2. An applicant must upload the following in Slate:
  - Two letters of recommendation,
  - A 300-500 word statement of goals including identification of the intended area of concentration.

3. Although exceptions may be considered, an applicant is normally expected to have graduated with a minimum baccalaureate GPA of 2.75.
4. Completion of an appropriate undergraduate major and a strong background in discipline-specific courses:
  - Exercise Nutrition: anatomy and physiology, biology, chemistry, exercise physiology, health sciences, structural kinesiology, and nutrition
  - Exercise, Sport and Movement Sciences: anatomy and physiology, health sciences, exercise physiology, structural kinesiology, biomechanics, and motor learning/control
  - Health Promotion: nutrition, biology, exercise physiology, health sciences, structural kinesiology, and psychology
  - Physical Education Teacher Education: structural kinesiology, anatomy and physiology, biology, exercise physiology, health sciences, motor learning/control, nutrition, and sport psychology
5. Completion of undergraduate coursework deemed by the concentration committee as prerequisite to graduate courses.
6. Student admissions to the respective master's programs within the Health Studies (HS) major are differentially restricted to enable Graduate Faculty within each concentration to closely mentor their students. To ensure maximum consideration for admission into a specific HS master's concentration, the following dates are provided: May 1 for summer and fall and November 1 for the spring semester. The admission committee may request a personal interview. Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point average, personal goals statement, relevant employment history, and letters of recommendation. Submission of scores for standardized tests such as the GRE and PRAXIS II are not required.

## Program Requirements

A minimum of 30 hours is required for the major although respective concentrations may require additional credit hours.

### Program Research Core (6 hours):

- HMSE 7010 - Research Methods in Health Sciences \*\* Credit Hours: (3)
- and
- EDPR 7541 - Stat Meth App Ed I \*\* Credit Hours: (3)
- or
- EDPR 7561 - Qualitative Mthds Educ \*\* Credit Hours: (3)
- or
- PUBH 7150 - Biostatistical Methods I \*\* Credit Hours: (3)

### Concentration Requirements:

#### Exercise, Sport and Movement Sciences (18 hours):

- ESMS 7020 - Pub/Prop in Health & Biomed\*\* Credit Hours: (3)
- ESMS 7123 - Mech Analysis Mtr Skill Credit Hours: (3)
- ESMS 7163 - Advanced Motor Learning Credit Hours: (3)
- ESMS 7201 - Phys Exer Musculoskltl\*\* Credit Hours: (3)
- ESMS 7202 - Phys Ex Mtbolc/Cardresp\*\* Credit Hours: (3)
- and
- EDPR 7542 - Statistical Methods Applied to Education II Credit Hours: (3)
- or
- PUBH 7152 - Biostatistical Methods II \*\* Credit Hours: (3)

## Electives (6 credits):

A total of six (6) hours of guided electives are to be selected with approval of the advisor for the Exercise, Sport and Movement Sciences concentration.

## Culminating Experience (6 hours)

### Exercise, Sport and Movement Sciences:

- ESMS 7900 - Research Laboratory Residency **Credit Hours: (1-6)**  
or
- ESMS 7950 - Applied Project in ESMS **Credit Hours: (1-6)**  
or
- HMSE 7996 - Thesis **Credit Hours: (1-6)**  
or
- Additional six credit hours of electives with approval of the advisor  
and
- Successful completion of a written comprehensive examination

### Note:

ESMS 7900 - Must be under the tutelage of a Graduate Faculty member with Full status at one of the College of Health Sciences Laboratories or at another approved site on campus, and involves 40 contact hours per credit hour. For residency arrangements to be formalized, they must first receive written or electronic approval by the student's Major Professor, the ESMS Program Coordinator, and the Director of the laboratory in which training is to occur.

HMSE 7996 - Students choosing the thesis option should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

## Other Requirements

1. Successful completion of a comprehensive examination is required.
  1. HPRO 7950 requires successful completion of a committee-approved applied project under the direction of the major professor that culminates in a formal write-up, presentation, and oral comprehensive exam covering the Health Studies core and required coursework in the HPRO concentration.
  2. The Advisor-Approved Elective option requires successful completion of both the advisor-approved course and a written comprehensive exam covering the Health Studies core and required coursework in the HPRO concentration.
2. Consult the Graduation Information webpage on the Graduate School website for information pertaining to the submission of comprehensive exam results and when to "Apply to Graduate" in the MyMemphis Portal.

## Program Retention Policy

All MS degree students are regularly monitored for completion of any entry-level deficiencies by graduate faculty.

Program retention committees, comprised of selected graduate faculty within the corresponding programs of study, monitor the academic progress of all MS degree candidates in the respective programs. Each committee determines whether the student is making sufficient progress and, in case of deficiencies, may recommend additional work or the dismissal of the student from the program. For any student recommended for dismissal, an appeals process is available.

## Health Studies - Health Promotion Concentration, (MS)

### MS Degree Program

Program objectives are: (1) to recognize the diverse nature of subject matter embodied in the respective program disciplines; (2) to understand the research findings and theoretical constructs undergirding the corresponding disciplines within the health studies umbrella, including the development of specialized skills needed for systematic inquiry; (3) to understand the critical role of diversity in delivering inclusive health studies services; (4) to develop effective leadership skills; and (5) to understand and embrace ethical standards of the respective disciplines.

### Admission Requirements and Program Prerequisites

1. Prospective students must apply through the Graduate School creating a login to fill out the application and submit transcripts. Submission of an official report of Graduate Record Examination (GRE) or PRAXIS II exam (for Physical Education Teacher Education only) scores is optional.
2. An applicant must upload the following in Slate:
  - Two letters of recommendation,
  - A 300-500 word statement of goals including identification of the intended area of concentration.
3. Although exceptions may be considered, an applicant is normally expected to have graduated with a minimum baccalaureate GPA of 2.75.
4. Completion of an appropriate undergraduate major and a strong background in discipline-specific courses:
  - Exercise Nutrition: anatomy and physiology, biology, chemistry, exercise physiology, health sciences, structural kinesiology, and nutrition
  - Exercise, Sport and Movement Sciences: anatomy and physiology, health sciences, exercise physiology, structural kinesiology, biomechanics, and motor learning/control
  - Health Promotion: nutrition, biology, exercise physiology, health sciences, structural kinesiology, and psychology
  - Physical Education Teacher Education: structural kinesiology, anatomy and physiology, biology, exercise physiology, health sciences, motor learning/control, nutrition, and sport psychology
5. Completion of undergraduate coursework deemed by the concentration committee as prerequisite to graduate courses.
6. Student admissions to the respective master's programs within the Health Studies (HS) major are differentially restricted to enable Graduate Faculty within each concentration to closely mentor their students. To ensure maximum consideration for admission into a specific HS master's concentration, the following dates are provided: May 1 for summer and fall and November 1 for the spring semester. The admission committee may request a personal interview. Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point average, personal goals statement, relevant employment history, and letters of recommendation. Submission of scores for standardized tests such as the GRE and PRAXIS II are not required.

### Program Requirements

A minimum of 30 hours is required for the major although respective concentrations may require additional credit hours.

### Program Research Core (6 hours):

- HMSE 7010 - Research Methods in Health Sciences \*\* Credit Hours: (3)  
and
- EDPR 7541 - Stat Meth App Ed I \*\* Credit Hours: (3)  
or
- EDPR 7561 - Qualitative Mthds Educ \*\* Credit Hours: (3)

- or
- PUBH 7150 - Biostatistical Methods I \*\* Credit Hours: (3)

## Concentration requirements:

### Health Promotion (21 hours):

- HPRO 7182 - Health Promotion \*\* Credit Hours: (3)
- HPRO 7183 - Lifestyle/Wellness/Disease \*\* Credit Hours: (3)
- HPRO 7710 - Prog/Event Planning for HPRO \*\* Credit Hours: (3)
- HPRO 7712 - Epidemiology \*\* Credit Hours: (3)
- HPRO 7722 - Hlth Intrvntn Thry/Apps \*\* Credit Hours: (3)
- HPRO 7780 - Health Counseling \*\* Credit Hours: (3)
- HPRO 7790 - Program Management in HPRO\*\* Credit Hours: (3)

### Guided electives selected with approval of the advisor:

Health Promotion (no electives if Applied Project completed)

### Culminating Experience (3-6 hours)

(Consult Graduate School Calendar for submission deadlines):

### Health Promotion:

- HPRO 7950 - Applied Project in HPRO \*\* Credit Hours: (1-6)
- OR
- Advisor-approved elective \*\* (3 credit hours)
- AND
- Written comprehensive examination

## Other Requirements

1. Successful completion of a comprehensive examination is required.
  1. HPRO 7950 requires successful completion of a committee-approved applied project under the direction of the major professor that culminates in a formal write-up, presentation, and oral comprehensive exam covering the Health Studies core and required coursework in the HPRO concentration.
  2. The Advisor-Approved Elective option requires successful completion of both the advisor-approved course and a written comprehensive exam covering the Health Studies core and required coursework in the HPRO concentration.
2. Consult the Graduation Information webpage on the Graduate School website for information pertaining to the submission of comprehensive exam results and when to "Apply to Graduate" in the MyMemphis Portal.

## Program Retention Policy

All MS degree students are regularly monitored for completion of any entry-level deficiencies by graduate faculty.

Program retention committees, comprised of selected graduate faculty within the corresponding programs of study, monitor the academic progress of all MS degree candidates in the respective programs. Each committee determines whether the student is making sufficient progress and, in case of deficiencies, may recommend additional work or the dismissal of the student from the program. For any student recommended for dismissal, an appeals process is available.

## **Health Studies - Physical Education Teacher Education Concentration, (MS)**

### **MS Degree Program**

Program objectives are: (1) to recognize the diverse nature of subject matter embodied in the respective program disciplines; (2) to understand the research findings and theoretical constructs undergirding the corresponding disciplines within the health studies umbrella, including the development of specialized skills needed for systematic inquiry; (3) to understand the critical role of diversity in delivering inclusive health studies services; (4) to develop effective leadership skills; and (5) to understand and embrace ethical standards of the respective disciplines.

### **Admission Requirements and Program Prerequisites**

1. Prospective students must apply through the Graduate School creating a login to fill out the application and submit transcripts. Submission of an official report of Graduate Record Examination (GRE) or PRAXIS II exam (for Physical Education Teacher Education only) scores is optional.
2. An applicant must upload the following in Slate:
  - Two letters of recommendation,
  - A 300-500 word statement of goals including identification of the intended area of concentration.
3. Although exceptions may be considered, an applicant is normally expected to have graduated with a minimum baccalaureate GPA of 2.75.
4. Completion of an appropriate undergraduate major and a strong background in discipline-specific courses:
  - Exercise Nutrition: anatomy and physiology, biology, chemistry, exercise physiology, health sciences, structural kinesiology, and nutrition
  - Exercise, Sport and Movement Sciences: anatomy and physiology, health sciences, exercise physiology, structural kinesiology, biomechanics, and motor learning/control
  - Health Promotion: nutrition, biology, exercise physiology, health sciences, structural kinesiology, and psychology
  - Physical Education Teacher Education: structural kinesiology, anatomy and physiology, biology, exercise physiology, health sciences, motor learning/control, nutrition, and sport psychology
5. Completion of undergraduate coursework deemed by the concentration committee as prerequisite to graduate courses.
6. Student admissions to the respective master's programs within the Health Studies (HS) major are differentially restricted to enable Graduate Faculty within each concentration to closely mentor their students. To ensure maximum consideration for admission into a specific HS master's concentration, the following dates are provided: May 1 for summer and fall and November 1 for the spring semester. The admission committee may request a personal interview. Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point average, personal goals statement, relevant employment history, and letters of recommendation. Submission of scores for standardized tests such as the GRE and PRAXIS II are not required.

### **Program Requirements**

A minimum of 30 hours is required for the major although respective concentrations may require additional credit hours.

### **Program Research Core (6 hours):**



- HMSE 7010 - Research Methods in Health Sciences \*\* Credit Hours: (3)  
and
- EDPR 7541 - Stat Meth App Ed I \*\* Credit Hours: (3)  
or
- EDPR 7561 - Qualitative Mthds Educ \*\* Credit Hours: (3)  
or
- PUBH 7150 - Biostatistical Methods I \*\* Credit Hours: (3)

### Concentration requirements:

#### Physical Education Teacher Education (15 hours):

- PETE 7006 - Instruction in PETE \*\* Credit Hours: (3)
- PETE 7202 - Curr & Instr Model in PETE \*\* Credit Hours: (3)
- PETE 7203 - Assessment & Eval in PETE \*\* Credit Hours: (3)
- PETE 7207 - Adaptive Technologies in PETE \*\* Credit Hours: (3)
- PETE 7152 - Problems in PETE Credit Hours: (1-3)

#### Guided electives selected with approval of the advisor:

##### Physical Education Teacher Education (6 hours):

*Choose from the following courses or other courses with approval of the advisor*

- ECED 7100 - Foundtn/Early Child Ed Credit Hours: (3)
- ECED 7104 - Play/Erly Chldhd Dev Credit Hours: (3)
- ECED 7107 - Constructivism In ECED Credit Hours: (3)
- ESMS 7163 - Advanced Motor Learning Credit Hours: (3)
- ESMS 7173 - Sport/Exercise Psych Credit Hours: (3)
- ESMS 6603 - Adv Meth Strength Cond Credit Hours: (3)
- HPRO 7182 - Health Promotion \*\* Credit Hours: (3)
- HPRO 7183 - Lifestyle/Wellness/Disease \*\* Credit Hours: (3)
- HPRO 7722 - Hlth Intrvntn Thry/Apps \*\* Credit Hours: (3)
- SPRT 7440 - Promotions in Sport Commerce \*\* Credit Hours: (3)
- SPRT 7603 - Admin of Athletics \*\* Credit Hours: (3)
- LEAD 7000 - Intro To Educ Ldrshp \*\* Credit Hours: (3)
- LEAD 7004 - Instructional Leadership \*\* Credit Hours: (3)
- IDT 7052 - Intro Instr Design & Technlgy \*\* Credit Hours: (3)
- IDT 7061 - Instructional Design & EdTech \*\* Credit Hours: (3)

#### Culminating Experience (6 hours)

(Consult Graduate School Calendar for submission deadlines - ):

#### Physical Education Teacher Education:

- HMSE 7996 - Thesis **Credit Hours: (1-6)**  
or
- PETE 7950 - Applied Project in PETE **Credit Hours: (1-6)**
- or two advisor-approved graduate courses

## Other Requirements

1. Successful completion of a comprehensive examination is required.
  1. HPRO 7950 requires successful completion of a committee-approved applied project under the direction of the major professor that culminates in a formal write-up, presentation, and oral comprehensive exam covering the Health Studies core and required coursework in the HPRO concentration.
  2. The Advisor-Approved Elective option requires successful completion of both the advisor-approved course and a written comprehensive exam covering the Health Studies core and required coursework in the HPRO concentration.
2. Consult the Graduation Information webpage on the Graduate School website for information pertaining to the submission of comprehensive exam results and when to "Apply to Graduate" in the MyMemphis Portal.

## Program Retention Policy

All MS degree students are regularly monitored for completion of any entry-level deficiencies by graduate faculty.

Program retention committees, comprised of selected graduate faculty within the corresponding programs of study, monitor the academic progress of all MS degree candidates in the respective programs. Each committee determines whether the student is making sufficient progress and, in case of deficiencies, may recommend additional work or the dismissal of the student from the program. For any student recommended for dismissal, an appeals process is available.

## History - Ancient Egyptian History Concentration, (MA)

### MA Degree Program

The MA program of study in history is a flexible one that prepares students for a variety of careers. We expect full-time students to complete the degree in two academic years. Students who regard the MA as a terminal degree normally elect to fulfill its requirements by 33 hours of course enrollment without writing a thesis. Most of these students go on to teaching positions on the secondary and community college level; a smaller number enter government service at all levels; and some secure specialized positions in business, industry, and journalism. Those students preparing for teaching on the university level or related careers in research and writing should look upon the MA program as preparation for advanced graduate study. We thus urge them to write a thesis.

### Program Admission

In making our decisions on admission we consider multiple factors, including transcripts and GPA, the nature of your coursework, recommendations, your writing sample and statement, and the compatibility of our program and faculty with your interests.

In most cases, you will need 18 hours in history from an accredited institution with at least a 3.0 PGA (on a 4.0 scale) in all undergraduate history courses, although we may also consider coursework in related fields.

In addition to submitting your application and all transcripts to the Graduate School, you should submit the following to the History Department:

1. Two letters of recommendation evaluating your academic ability.
2. A writing sample, such as a paper from a course, that demonstrates your ability to write and think about history.
3. A letter from you explaining your major field(s) of interest in history (chosen from the list of PhD fields below), any particular interests, and your reasons for seeking the MA degree.

## Program Requirements

1. A total of 33 hours. For the student electing to write a thesis, this includes 9 hours of thesis credit. No more than 9 hours of thesis credit may count toward the degree.
2. Only 6 hours of coursework at the 6000 level may count toward the degree, although we may accept 9 hours in special circumstances by petition to the Coordinator of Graduate Studies.
3. At least one 7000-level historiography course in any field and at least one HIST 7070.
4. Only 3 hours can be HIST 7012, although we may accept 6 hours in special circumstances by petition to the Coordinator of Graduate Studies. HIST 7991 does not count toward the degree.
5. No more than 6 hours may be taken, with the approval of the Coordinator of Graduate Studies, in a field outside history. Under special circumstances students may petition for up to an additional 6 hours.
6. No more than 24 hours may be taken in United States History, European History, or any one field of history, such as Ancient History.
7. A student who makes a grade of C+ or lower in six credits or more hours of course work will be dropped from the MA program, except under exceptional circumstances. No grade of C+ or lower may count toward the required number of credits.
8. An oral Comprehensive Examination over course work given by a committee chosen by the Graduate Advisor and the student. Online only students take a written exam instead.
9. For those who elect to write a thesis, approval by a department committee headed by the faculty member who directed the thesis. All theses are based upon primary research and are typically between 16,000 and 25,000 words in length.  
NOTE: Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

## Concentration in Ancient Egyptian History

(Note: "Concentration" refers to a specific program in this area. It does not imply that this is our only area of specialization.)

Beyond the core requirements, students choosing this concentration must take 18 hours of MA level courses with a focus on ancient Egypt; this includes 9 hours of thesis credit for those writing a thesis. As part of the 18 credits, students must take two semesters of basic Middle Egyptian (ARTH 7115 and ARTH 7116), plus two more semesters of readings from ancient Egyptian texts. Courses in ancient art, archaeology, and language (taught in the Art, Earth Sciences, and/or Foreign Language departments) may count as being in field(s) separate from the field of ancient history. Admission into the graduate program in history does not automatically ensure admission into this concentration. The approval of the department's Egyptologists is also necessary, so students should contact them directly.

## The Online M.A. Program

The History Department also offers an online MA degree program in which all the degree requirements may be completed online. Admission requirements are the same as for the on-campus MA program, but you must specify in your application and the required letter discussing your interests that you are applying for the online MA degree. Requirements for the online MA degree are also the same as for the on-campus MA with the following exceptions for those who take all their credits online: a) the thesis option is not always available to online students; b) online students may apply up to 9 hours of 6000-level history courses to the degree; and c) online students take a written exam comprehensive exam.

## History, (MA)

### MA Degree Program

The MA program of study in history is a flexible one that prepares students for a variety of careers. We expect full-time students to complete the degree in two academic years. Students who regard the MA as a terminal degree normally elect to fulfill its requirements by 33 hours of course enrollment without writing a thesis. Most of these students go on to teaching positions on the secondary and community college level; a smaller number enter government service at all levels; and some secure specialized positions in business, industry, and journalism. Those students preparing for teaching on the university level or related careers in research and writing should look upon the MA program as preparation for advanced graduate study. We thus urge them to write a thesis.

### Program Admission

In making our decisions on admission we consider multiple factors, including transcripts and GPA, the nature of your coursework, recommendations, your writing sample and statement, and the compatibility of our program and faculty with your interests.

In most cases, you will need 18 hours in history from an accredited institution with at least a 3.0 PGA (on a 4.0 scale) in all undergraduate history courses, although we may also consider coursework in related fields.

In addition to submitting your application and all transcripts to the Graduate School, you should submit the following to the History Department:

1. Two letters of recommendation evaluating your academic ability.
2. A writing sample, such as a paper from a course, that demonstrates your ability to write and think about history.
3. A letter from you explaining your major field(s) of interest in history (chosen from the list of PhD fields below), any particular interests, and your reasons for seeking the MA degree.

### Program Requirements

1. A total of 33 hours. For the student electing to write a thesis, this includes 9 hours of thesis credit. No more than 9 hours of thesis credit may count toward the degree.
2. Only 6 hours of coursework at the 6000 level may count toward the degree, although we may accept 9 hours in special circumstances by petition to the Coordinator of Graduate Studies.
3. At least one 7000-level historiography course in any field and at least one HIST 7070.
4. Only 3 hours can be HIST 7012, although we may accept 6 hours in special circumstances by petition to the Coordinator of Graduate Studies. HIST 7991 does not count toward the degree.
5. No more than 6 hours may be taken, with the approval of the Coordinator of Graduate Studies, in a field outside history. Under special circumstances students may petition for up to an additional 6 hours.
6. No more than 24 hours may be taken in United States History, European History, or any one field of history, such as Ancient History.
7. A student who makes a grade of C+ or lower in six credits or more hours of course work will be dropped from the MA program, except under exceptional circumstances. No grade of C+ or lower may count toward the required number of credits.
8. An oral Comprehensive Examination over course work given by a committee chosen by the Graduate Advisor and the student. Online only students take a written exam instead.
9. For those who elect to write a thesis, approval by a department committee headed by the faculty member who directed the thesis. All theses are based upon primary research and are typically between 16,000 and 25,000 words in length.  
NOTE: Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

## The Online M.A. Program

The History Department also offers an online MA degree program in which all the degree requirements may be completed online. Admission requirements are the same as for the on-campus MA program, but you must specify in your application and the required letter discussing your interests that you are applying for the online MA degree. Requirements for the online MA degree are also the same as for the on-campus MA with the following exceptions for those who take all their credits online: a) the thesis option is not always available to online students; b) online students may apply up to 9 hours of 6000-level history courses to the degree; and c) online students take a written exam comprehensive exam.

## Information Systems, (MS)

### MS in Information Systems

#### Program Admission

1. Satisfactory performance on the Graduate Management Admissions Test (GMAT) or Graduate Record Exam (GRE).
2. Satisfactory undergraduate grade point average as evidenced by an official transcript (evaluated by an agency such as WES if an international student).
3. Submit an application to the Graduate Admissions Office.
4. International Students must submit scores on the TOEFL exam.

#### Program Requirements

- MIS 7650 - Info Syst Global Enterprise \*\* Credit Hours: (3)
- MIS 7700 - Fundamentals of Data Analytics Credit Hours: (3)
- MIS 7605 - Bus Database Systems \*\* Credit Hours: (3)
- MIS 7610 - Sys Analysis & Design \*\* Credit Hours: (3)
- MIS 7620 - Business Machine Learning I \*\* Credit Hours: (3)
- MIS 7640 - Inform Sys Mgmt/Plan Credit Hours: (3)  
Five Elective courses approved by departmental advisor. Any electives that are not listed here must be approved by advisor in advance.
- MIS 7710 - Web Analytics Credit Hours: (3)
- MIS 7720 - Bus. Artificial Intelligence Credit Hours: (3)
- MIS 6160 - Mobile Application Development Credit Hours: (3)
- MIS 7170 - Global Info Tech Mgmt Credit Hours: (3)
- MIS 7190 - Programing For Business Credit Hours: (3)
- MIS 7435 - Web Site Devel Credit Hours: (3)
- MIS 7455 - Cyber Ethics in IT Credit Hours: (3)
- MIS 7615 - Enterprise Network & Security Credit Hours: (3)
- MIS 7621 - Business Machine Learning II Credit Hours: (3)
- MIS 7630 - Informatn Systms Proj Credit Hours: (3)
- MIS 7655 - Adv Systems Analysis Credit Hours: (3)
- MIS 7660 - Advanced Data Management Credit Hours: (3)
- MIS 7665 - Adv Business Compt Envn Credit Hours: (3)
- MIS 7670 - Information Security Mgmt Credit Hours: (3)
- MIS 7671 - Project/Change Mgmt \*\* Credit Hours: (3)

- MIS 6672 - Project Mgmt Tools/Lead **Credit Hours: (3)**
- MIS 6681 - Fundamental/Software Testing **Credit Hours: (3)**
- MIS 6682 - Advanced Software Testing **Credit Hours: (3)**
- MIS 7910 - Prob Mgmt Info Syst **Credit Hours: (1-6)**
- MIS 7470-7479 - Topics in Information Systems **Credit Hours: (3)**

## Experiential Learning Credit

Students enrolled in the MS in IS program will be allowed to request a maximum of six credit hours of experiential learning credit for the purposes of meeting their degree requirements (the six credit hours will apply toward the required credit hours needed to complete a concentration). This six credit hours of experiential learning credit will be granted only for students who have qualified, exceptional experience that can be related to one or more courses in the degree program.

In order to request consideration for the credit hours, students must submit a portfolio for review by following the guidelines of the Center for Teaching and Learning. For more information about their guidelines, refer to the Center for Teaching and Learning's Experiential Learning Credit website: (<http://www.memphis.edu/innovation/elc/portfoliodevelopment.php>).

## **Instruction and Curriculum Leadership - Applied Behavior Analysis, (MS)**

### MS Degree Program ICL

This program is designed for students who are seeking advanced study and professional development in education focusing on Applied Behavior Analysis, Instruction and Curriculum, Instructional Design and Technology, Literacy, Early Childhood Education, Social Studies Education, STEM Education, or Special Education. Specific program requirements for the listed concentrations are found on the ICL website. An option for students seeking the MS degree with a concentration in Instruction and Curriculum is to complete program requirements that prepare students to apply for a Tennessee Library Information Specialist Endorsement.

### Program Admission

Admission to the Graduate School and admission to a specific ICL graduate program are separate procedures. Applicants must submit the following admissions materials before the application will be reviewed:

1. An application to the Graduate School that includes:
  1. Official transcripts of undergraduate and graduate study;
2. Applicants who are not native speakers of English and are not graduates of The University of Memphis must supply a minimum score of 550 on the paper, a 210 on the computer-based, or 79 on the internet based Test of English as a Foreign Language (TOEFL).
3. Submit the ICL Department MS Application along with two letters of recommendation on letterhead, preferably one from a college/university professor to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave, Memphis, TN 38152). All application information must be received by February 1 for summer semesters, April 1 for fall semesters, and October 1 for spring semesters.
4. The above criteria represent the minimum acceptable admission requirements. Depending on the applicant's educational background, the graduate committee may require additional coursework to prepare the student for advanced master's level studies.

Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point averages, scores of the submitted tests, and letters of recommendation.

## Program Requirements

1. A minimum of 30 graduate semester hours is required.
2. The major will consist of 12 semester hours including courses identified by the concentration and ICL 7992 - Master's Project \*\* or IDT 7095 - Dev Intractive Lrng Envirnmnt II \*\* or SPED 7900 - Advanced Practicum/Capstone.
3. EDPR 7521 - Introduction to Research Design and Methodology \*\* or EDPR 7581 - Behavior Analysis/Single Case Design

## Concentration Requirements

### **Instruction and Curriculum Leadership - Early Childhood Education Concentration, (MS)**

#### MS Degree Program ICL

This program is designed for students who are seeking advanced study and professional development in education focusing on Applied Behavior Analysis, Instruction and Curriculum, Instructional Design and Technology, Literacy, Early Childhood Education, Social Studies Education, STEM Education, or Special Education. Specific program requirements for the listed concentrations are found on the ICL website. An option for students seeking the MS degree with a concentration in Instruction and Curriculum is to complete program requirements that prepare students to apply for a Tennessee Library Information Specialist Endorsement.

## Program Admission

Admission to the Graduate School and admission to a specific ICL graduate program are separate procedures. Applicants must submit the following admissions materials before the application will be reviewed:

1. An application to the Graduate School that includes:
  1. Official transcripts of undergraduate and graduate study;
2. Applicants who are not native speakers of English and are not graduates of The University of Memphis must supply a minimum score of 550 on the paper, a 210 on the computer-based, or 79 on the internet based Test of English as a Foreign Language (TOEFL).
3. Submit the ICL Department MS Application along with two letters of recommendation on letterhead, preferably one from a college/university professor to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave, Memphis, TN 38152). All application information must be received by February 1 for summer semesters, April 1 for fall semesters, and October 1 for spring semesters.
4. The above criteria represent the minimum acceptable admission requirements. Depending on the applicant's educational background, the graduate committee may require additional coursework to prepare the student for advanced master's level studies.

Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point averages, scores of the submitted tests, and letters of recommendation.

## Program Requirements

1. A minimum of 30 graduate semester hours is required.
2. The major will consist of 12 semester hours including courses identified by the concentration and ICL 7992 - Master's Project \*\* or IDT 7095 - Dev Intractive Lrng Envirnmnt II \*\* or SPED 7900 - Advanced Practicum/Capstone.
3. EDPR 7521 - Introduction to Research Design and Methodology \*\* or EDPR 7581 - Behavior Analysis/Single Case Design

## Concentration Requirements

Fifteen (15) semester hours of electives are required. Courses taken depend on the undergraduate background, previous experiences of the student, and the nature of the major area of concentration. These courses must be approved by the assigned advisor and support the major area of study.

## Instruction and Curriculum Leadership - Instruction and Curriculum Concentration, (MS)

### MS Degree Program ICL

This program is designed for students who are seeking advanced study and professional development in education focusing on Applied Behavior Analysis, Instruction and Curriculum, Instructional Design and Technology, Literacy, Early Childhood Education, Social Studies Education, STEM Education, or Special Education. Specific program requirements for the listed concentrations are found on the ICL website. An option for students seeking the MS degree with a concentration in Instruction and Curriculum is to complete program requirements that prepare students to apply for a Tennessee Library Information Specialist Endorsement.

### Program Admission

Admission to the Graduate School and admission to a specific ICL graduate program are separate procedures. Applicants must submit the following admissions materials before the application will be reviewed:

1. An application to the Graduate School that includes:
  1. Official transcripts of undergraduate and graduate study;
2. Applicants who are not native speakers of English and are not graduates of The University of Memphis must supply a minimum score of 550 on the paper, a 210 on the computer-based, or 79 on the internet based Test of English as a Foreign Language (TOEFL).
3. Submit the ICL Department MS Application along with two letters of recommendation on letterhead, preferably one from a college/university professor to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave, Memphis, TN 38152). All application information must be received by February 1 for summer semesters, April 1 for fall semesters, and October 1 for spring semesters.
4. The above criteria represent the minimum acceptable admission requirements. Depending on the applicant's educational background, the graduate committee may require additional coursework to prepare the student for advanced master's level studies.

Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point averages, scores of the submitted tests, and letters of recommendation.

### Program Requirements

1. A minimum of 30 graduate semester hours is required.
2. The major will consist of 12 semester hours including courses identified by the concentration and ICL 7992 - Master's Project \*\* or IDT 7095 - Dev Intractive Lrng Envirnmnt II \*\* or SPED 7900 - Advanced Practicum/Capstone.
3. EDPR 7521 - Introduction to Research Design and Methodology \*\* or EDPR 7581 - Behavior Analysis/Single Case Design

## Concentration Requirements



Fifteen (15) semester hours of electives are required. Courses taken depend on the undergraduate background, previous experiences of the student, and the nature of the major area of concentration. These courses must be approved by the assigned advisor and support the major area of study.

## **Instruction and Curriculum Leadership - Instructional Design and Technology Concentration, (MS)**

### **MS Degree Program**

The Master of Science Degree in Instruction and Curriculum Leadership with a concentration in Instructional Design and Technology provides students with the skillsets to develop cutting edge face-to-face, online, and hybrid instruction for business, government, healthcare, higher education, PK-12 education, and non-profit settings. The program is 100% online, 30 semester hours, and geared for working professionals. Students complete a capstone project in lieu of a thesis. Eclectic in nature, the program welcomes students from varied majors and career paths, including (but not limited to) art, business, communication, computer science, education, English, graphic design, philosophy, psychology, social work, and sociology.

The degree program offers two tracks:

- Design and Development for those interested in training that takes place in business, higher education, government, healthcare, and non-profit settings
- Educational Technology for those interested in PK-12 education

### **Program Admission**

Applicants must have:

1. An undergraduate degree from an accredited college or university
2. A Graduate School application with the following materials:
  1. Cover letter indicating why you would like to enter the degree program and what track you will pursue.
  2. Official transcripts from each college or university attended
  3. Two letters of recommendation from people familiar with the applicant's academic background and aptitude for graduate work.
  4. Paid application fee.
  5. Non-native speakers of English must supply results of the Test of English as a Foreign Language (TOEFL). A minimum score of 550 on the paper, 210 on the computer-based, or 79 on the Internet-based exam is needed.

Qualified applicants may enter the degree program in Fall, Spring, or Summer semesters.

### **Program Requirements**

A minimum total of 30 masters credit hours must be completed inclusive of coursework and design project.

### **Elective Courses**

Students will also take 1-2, 3 hour, IDT elective courses as approved by the program coordinator.

### **Additional Information**

The program website, <https://www.memphis.edu/idt>, provides additional information regarding course descriptions, schedules, policies, and so forth.

## **Instruction and Curriculum Leadership - Literacy Education Concentration, (MS)**

### **MS Degree Program ICL**

This program is designed for students who are seeking advanced study and professional development in education focusing on Applied Behavior Analysis, Instruction and Curriculum, Instructional Design and Technology, Literacy, Early Childhood Education, Social Studies Education, STEM Education, or Special Education. Specific program requirements for the listed concentrations are found on the ICL website. An option for students seeking the MS degree with a concentration in Instruction and Curriculum is to complete program requirements that prepare students to apply for a Tennessee Library Information Specialist Endorsement.

### **Program Admission**

Admission to the Graduate School and admission to a specific ICL graduate program are separate procedures. Applicants must submit the following admissions materials before the application will be reviewed:

1. An application to the Graduate School that includes:
  1. Official transcripts of undergraduate and graduate study;
2. Applicants who are not native speakers of English and are not graduates of The University of Memphis must supply a minimum score of 550 on the paper, a 210 on the computer-based, or 79 on the internet based Test of English as a Foreign Language (TOEFL).
3. Submit the ICL Department MS Application along with two letters of recommendation on letterhead, preferably one from a college/university professor to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave, Memphis, TN 38152). All application information must be received by February 1 for summer semesters, April 1 for fall semesters, and October 1 for spring semesters.
4. The above criteria represent the minimum acceptable admission requirements. Depending on the applicant's educational background, the graduate committee may require additional coursework to prepare the student for advanced master's level studies.

Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point averages, scores of the submitted tests, and letters of recommendation.

### **Program Requirements**

1. A minimum of 30 graduate semester hours is required.
2. The major will consist of 12 semester hours including courses identified by the concentration and ICL 7992 - Master's Project \*\* or IDT 7095 - Dev Intractive Lrng Envirnmnt II \*\* or SPED 7900 - Advanced Practicum/Capstone.
3. EDPR 7521 - Introduction to Research Design and Methodology \*\* or EDPR 7581 - Behavior Analysis/Single Case Design

### **Concentration Requirements**

Fifteen (15) semester hours of electives are required. Courses taken depend on the undergraduate background, previous experiences of the student, and the nature of the major area of concentration. These courses must be approved by the assigned advisor and support the major area of study.

## Instruction and Curriculum Leadership - School Library Information Specialist Concentration, (MS)

### MS Degree Program

This program is designed for students who are seeking advanced study and professional development in education focusing on Applied Behavior Analysis, Instruction and Curriculum, Instructional Design and Technology, Literacy, Early Childhood Education, or Special Education. Specific program requirements for the listed concentrations are found on the ICL website. This Master's and certificate program program of study leads to the TN Dept. of Education Library Information Specialist pre-K-12 endorsement (473).

### Program Admission

Admission to the Graduate School and admission to a specific ICL graduate program are separate procedures. Applicants must submit the following admissions materials before the application will be reviewed:

1. An application to the Graduate School that includes:
  1. Official transcripts of undergraduate and graduate study;
2. Applicants who are not native speakers of English and are not graduates of The University of Memphis must supply a minimum score of 550 on the paper, a 210 on the computer-based, or 79 on the internet based Test of English as a Foreign Language (TOEFL).
3. Submit the ICL Department MS Application along with two letters of recommendation on letterhead, preferably one from a college/university professor to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave, Memphis, TN 38152). All application information must be received by February 1 for summer semesters, April 1 for fall semesters, and October 1 for spring semesters.
4. The above criteria represent the minimum acceptable admission requirements. Depending on the applicant's educational background, the graduate committee may require additional coursework to prepare the student for advanced master's level studies.

Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point averages, scores of the submitted tests, and letters of recommendation.

### Program Requirements

1. Bachelor's degree (in any area) required for admission.
2. 30 credit hours (including 9 core courses) and practicum are required to earn the Master of Science degree.
3. If you are not certified as a teacher, 2 additional MAT courses are required. Additionally, you must be admitted to the Teacher Education Program (TEP).
4. If a student already has a Master's degree and is a licensed teacher, only 6 courses for SLIS endorsement are required, plus successful completion of the required Advanced Clinical Practicum. To complete the ICL Master of Science (MS) degree, three additional courses are required.

### Concentration Requirements

- ICL 7132 - Catalog/Classification \*\* Credit Hours: (3)
- ICL 7133 - School Library Admin \*\* Credit Hours: (3)
- ICL 7134 - Internet in the School Library \*\* Credit Hours: (3)
- ICL 7301 - Literature in PreK-12 School \*\* Credit Hours: (3)
- ICL 7730 - Found Librarianship \*\* Credit Hours: (3)

- ICL 7731 - Intro To Bibliography \*\* Credit Hours: (3)
- ICL 7800 - Adv Clinical Practicum \*\* Credit Hours: (3-9) (This course can **only** be taken after all other SLIS content courses have been successfully completed and after passing the Praxis 5311 exam.)

## Instruction and Curriculum Leadership - Special Education Concentration, (MS)

### MS Degree Program ICL

This program is designed for students who are seeking advanced study and professional development in education focusing on Applied Behavior Analysis, Instruction and Curriculum, Instructional Design and Technology, Literacy, Early Childhood Education, Social Studies Education, STEM Education, or Special Education. Specific program requirements for the listed concentrations are found on the ICL website. An option for students seeking the MS degree with a concentration in Instruction and Curriculum is to complete program requirements that prepare students to apply for a Tennessee Library Information Specialist Endorsement.

### Program Admission

Admission to the Graduate School and admission to a specific ICL graduate program are separate procedures. Applicants must submit the following admissions materials before the application will be reviewed:

1. An application to the Graduate School that includes:
  1. Official transcripts of undergraduate and graduate study;
2. Applicants who are not native speakers of English and are not graduates of The University of Memphis must supply a minimum score of 550 on the paper, a 210 on the computer-based, or 79 on the internet based Test of English as a Foreign Language (TOEFL).
3. Submit the ICL Department MS Application along with two letters of recommendation on letterhead, preferably one from a college/university professor to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave, Memphis, TN 38152). All application information must be received by February 1 for summer semesters, April 1 for fall semesters, and October 1 for spring semesters.
4. The above criteria represent the minimum acceptable admission requirements. Depending on the applicant's educational background, the graduate committee may require additional coursework to prepare the student for advanced master's level studies.

Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point averages, scores of the submitted tests, and letters of recommendation.

### Program Requirements

1. A minimum of 30 graduate semester hours is required.
2. The major will consist of 12 semester hours including courses identified by the concentration and ICL 7992 - Master's Project \*\* or IDT 7095 - Dev Intractive Lrng Envirnmnt II \*\* or SPED 7900 - Advanced Practicum/Capstone.
3. EDPR 7521 - Introduction to Research Design and Methodology \*\* or EDPR 7581 - Behavior Analysis/Single Case Design

### Concentration Requirements

Fifteen (15) semester hours of electives are required. Courses taken depend on the undergraduate background, previous experiences of the student, and the nature of the major area of concentration. These courses must be approved by the assigned advisor and support the major area of study.

## Instruction and Curriculum Leadership- Social Studies Education Concentration (MS)

The purpose of the Instruction, Curriculum, and Leadership (ICL) Master of Science degree with a Social Studies concentration is to provide practical knowledge, training, and experience to individuals interested in exploring, researching, and implementing social studies content pedagogy in the K-12 environments.

### MS Degree Program ICL

This program is designed for students who are seeking advanced study and professional development in education focusing on Applied Behavior Analysis, Instruction and Curriculum, Instructional Design and Technology, Literacy, Early Childhood Education, Social Studies Education, STEM Education, or Special Education. Specific program requirements for the listed concentrations are found on the ICL website. An option for students seeking the MS degree with a concentration in Instruction and Curriculum is to complete program requirements that prepare students to apply for a Tennessee Library Information Specialist Endorsement.

### Program Admission

Admission to the Graduate School and admission to a specific ICL graduate program are separate procedures. Applicants must submit the following admissions materials before the application will be reviewed:

1. An application to the Graduate School that includes:
  1. Official transcripts of undergraduate and graduate study;
2. Applicants who are not native speakers of English and are not graduates of The University of Memphis must supply a minimum score of 550 on the paper, a 210 on the computer-based, or 79 on the internet based Test of English as a Foreign Language (TOEFL).
3. Submit the ICL Department MS Application along with two letters of recommendation on letterhead, preferably one from a college/university professor to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave, Memphis, TN 38152). All application information must be received by February 1 for summer semesters, April 1 for fall semesters, and October 1 for spring semesters.
4. The above criteria represent the minimum acceptable admission requirements. Depending on the applicant's educational background, the graduate committee may require additional coursework to prepare the student for advanced master's level studies.

Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point averages, scores of the submitted tests, and letters of recommendation.

### Program Requirements

1. A minimum of 30 graduate semester hours is required.
2. The major will consist of 12 semester hours including courses identified by the concentration and ICL 7992 - Master's Project \*\* or IDT 7095 - Dev Intractive Lrng Envirnmnt II \*\* or SPED 7900 - Advanced Practicum/Capstone.
3. EDPR 7521 - Introduction to Research Design and Methodology \*\* or EDPR 7581 - Behavior Analysis/Single Case Design

### Social Studies Education Concentration

Fifteen (15) semester hours of electives are required. Courses taken depend on the undergraduate background, previous experiences of the student, and the nature of the major area of concentration. These courses must be approved by the assigned advisor and support the major area of study.

## Instruction and Curriculum Leadership-STEM Education Concentration (MS)

The Instruction, Curriculum, and Leadership (ICL) Master of Science degree with a concentration in STEM Education is to provide practical knowledge, training, and experience to individuals interested in exploring, researching, and implementing STEM content and pedagogy in K-12 environments.

### MS Degree Program ICL

This program is designed for students who are seeking advanced study and professional development in education focusing on Applied Behavior Analysis, Instruction and Curriculum, Instructional Design and Technology, Literacy, Early Childhood Education, Social Studies Education, STEM Education, or Special Education. Specific program requirements for the listed concentrations are found on the ICL website. An option for students seeking the MS degree with a concentration in Instruction and Curriculum is to complete program requirements that prepare students to apply for a Tennessee Library Information Specialist Endorsement.

### Program Admission

Admission to the Graduate School and admission to a specific ICL graduate program are separate procedures. Applicants must submit the following admissions materials before the application will be reviewed:

1. An application to the Graduate School that includes:
  1. Official transcripts of undergraduate and graduate study;
2. Applicants who are not native speakers of English and are not graduates of The University of Memphis must supply a minimum score of 550 on the paper, a 210 on the computer-based, or 79 on the internet based Test of English as a Foreign Language (TOEFL).
3. Submit the ICL Department MS Application along with two letters of recommendation on letterhead, preferably one from a college/university professor to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave, Memphis, TN 38152). All application information must be received by February 1 for summer semesters, April 1 for fall semesters, and October 1 for spring semesters.
4. The above criteria represent the minimum acceptable admission requirements. Depending on the applicant's educational background, the graduate committee may require additional coursework to prepare the student for advanced master's level studies.

Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point averages, scores of the submitted tests, and letters of recommendation.

### Program Requirements

1. A minimum of 30 graduate semester hours is required.
2. The major will consist of 12 semester hours including courses identified by the concentration and ICL 7992 - Master's Project \*\* or IDT 7095 - Dev Intractive Lrng Envirnmnt II \*\* or SPED 7900 - Advanced Practicum/Capstone.
3. EDPR 7521 - Introduction to Research Design and Methodology \*\* or EDPR 7581 - Behavior Analysis/Single Case Design

### STEM Education Concentration:

- ICL 7503 - Secndry Math Ed Curric \*\* Credit Hours: (3)  
or
- ICL 7603 - Scndry Schl Sci Curr \*\* Credit Hours: (3)

- ICL 7508 - Sem Mathematics Educ \*\* Credit Hours: (3)  
or
- ICL 7608 - Sem Science Education \*\* Credit Hours: (3)

## Elective Courses: Choose 4

- ICL 7719 - Introduction to STEM Education \*\* Credit Hours: (3)
- ICL 7720 - STEM Curriculum Leadership Credit Hours: (3)
- ICL 7721 - STEM Teacher Development Credit Hours: (3)
- ICL 7722 - Teaching and Learning in STEM Credit Hours: (3)
- ICL 7723 - Equity in STEM Education Credit Hours: (3)

## Graduation Requirements

Students must pass all above-required coursework with a minimum of 3.0 GPA.

## Retention Requirements

Maintenance of 3.0 GPA in all coursework; other requirements as per Graduate School guidelines:  
<https://catalog.memphis.edu/index.php>.

## Journalism and Strategic Media, (MA)

### MA Degree Program

Students in the MA program may take courses in advertising, news, new and emerging media, public relations, and visual communication in keeping with their needs and interests. The curriculum is designed for undergraduates interested in advanced study, practicing professionals looking to deepen their knowledge and sharpen their skills, workers changing careers, and those who anticipate going into teaching. Students should consult with the coordinator of graduate studies and with faculty advisors in designing individual course plans.

Program objectives are: (1) understanding and application of First Amendment principles and the law appropriate to professional practice, the history and role of professionals and institutions in shaping communications, and the diversity of groups in relationship to communications; (2) understanding the concepts and being able to apply theories in the use and presentation of images and information; (3) developing the ability to work ethically in pursuit of truth, accuracy, fairness and diversity; (4) developing the ability to conduct research and evaluate information by methods appropriate to the communications professions in which they work; and (5) cultivating the ability to write correctly and clearly in forms and styles appropriate for the communications professions, their audiences, and the purposes they serve.

### Program Admission and Prerequisites

Applicants to the program are evaluated on a monthly basis. Students may be admitted for the fall or spring semesters or for the summer session. Admission to the journalism program is competitive. Multiple criteria are considered and include cumulative grade point averages, relevant employment history in the form of a resume, and a personal goal statement.

Applicants whose highest degree is from a foreign university must have their credentials evaluated. The university will accept evaluations done by any credentialing agency listed on the National Association of Credential Evaluation Services web site (<http://www.naces.org>).

## Program Requirements

1. Courses and credit hours. Students will complete their degrees with a minimum of 33 hours of graduate credit. All courses taken for graduate credit must be approved by the graduate faculty of the department. Student work must be completed at a level of performance satisfactory to the graduate faculty. Students must complete all journalism courses with a grade point average of 3.0 or better. Course work taken outside the department must be approved by the student's advisor. No more than 9 credit hours of coursework may be taken at the 6000-level.

Students with graduate credit earned at another institution may petition to have it applied toward their degree requirements at the University of Memphis. Such credit is not transferred automatically and must be approved by the graduate faculty. A maximum of 6 semester hours earned at another regionally accredited university may be applied toward the master's degree requirements at the University of Memphis.

2. Students will choose one of four emphasis areas: Integrated Strategic Media (21 hours), Visual Media (21 hours), News and Storytelling (21 hours), or Mass Media Research (21 hours, which includes a six-hour thesis).
3. Required Courses. All students are required to complete a nine-hour core consisting of Pro Seminar, Mass Communication Theory, and one Mass Communication Research Methods course. Students must complete Pro Seminar by the end of their first semester. Students must also complete a capstone, which can be a thesis, practicum, professional project or conference presentation.

Students are encouraged to prioritize the core courses, and complete them as soon as possible. No more than three hours in either JRSM 7700 or JRSM 7800, but not both, may be applied to the degree. No more than three hours in either JRSM 7600 or JRSM 7650, but not both, may be applied to the degree. All requirements for the degree must be completed in eight years. Courses older than eight years will not be allowed as credit toward the master's degree. Additionally, students who entered the program without an undergraduate degree in journalism and mass communication or a similar field are required to take JRSM 6700, JRSM 7320, and JRSM 7000.

4. Master's Thesis ( JRSM 7996 - Thesis \*\*). Students who anticipate continuing with doctoral study or who are interested in academic research or in college teaching should complete an independent research project culminating in a master's thesis. A thesis uses the academic research method to examine a phenomenon in mass communication, or to consider a legal, historical, or visual issue related to journalism and mass communication. It must collect and analyze original data, and discuss how the research fits in with established knowledge. A thesis might use content analysis, survey, experiment, focus groups, in-depth interviews, document analysis, ethnography, legal analysis, historical analysis, or visual analysis. On completion of a thesis, a student will take an oral examination with a three-person faculty committee that assesses the thesis and the student's broader awareness of theoretical and empirical issues in his or her field. The student must defend both the thesis proposal as well as the final document. He or she is responsible for assembling a committee, which should consist of at least 3 faculty members (a minimum of 2 from Journalism and Strategic Media). Students must take 6 credit hours of thesis credit, and cannot count more than 6 toward graduation, but may take more if needed. Graduate assistants on the thesis path may take only 6 hours of thesis credit in their final semester and remain on their assistantship.

Original data collection for a thesis might need approval from the Institutional Review Board, depending on the type of research. Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write the thesis.

5. Professional Project ( JRSM 7998 - Professional Project \*\*). Students seeking master's degrees to enhance career progress may complete a professional project under the direction of a faculty committee. In a project, students create an original work that can be used by a professional outlet. The way a project is completed depends on the type of work being done. Students are expected to complete a project that would be useful in their careers.

A professional project can take many forms. It might be a marketing plan, business startup, a communications plan for a nonprofit organization, a series of research-based journalism articles, or a visual creative project. Students will



determine the expectations and guidelines for the project with the committee chair. The quality of work in a project is expected to be equal to a thesis.

On completion of a professional project, a student will take an oral examination that assesses the project and the student's broader awareness of theoretical and empirical issues in his or her field. The student must defend both the project proposal as well as the final document. He or she is responsible for assembling a committee, which should consist of at least 2 Journalism faculty; additional outside members are welcome at the students' choice.

Students must take 3 credit hours of project credit, and cannot count more than 3 toward graduation, but may take more if needed.

A project might need approval from the Institutional Review Board, depending on the type of research.

6. Practicum (JRSM 7600) Students may fulfill their capstone with a Graduate Media Practicum, and the writing of a report analyzing their practicum experience taking media theory in consideration. The report must be defended orally in front of at least two Journalism and Strategic Media faculty members. Although all graduate students are encouraged to work in internships, students may only count one for the graduate media practicum experience and may not otherwise earn internship credit. Students must write a proposal for the practicum and defend it to their committee before completing the practicum. Then, students must defend their final report to their committee to earn credit for the capstone.
7. Peer-reviewed published or presented research. Students may fulfill the capstone by presenting a solo or double-authored research paper at a full-paper, peer-reviewed, regional, national, or international journalism, communication, or media conference, or publish research in an academic journal, in place of a thesis. In this event, the student will fill the remaining hours of the degree with elective courses.

## **Leadership and Policy Studies - School Administration and Supervision Concentration, (MS)**

### **Master of Science (MS)**

The Department offers an online Master of Science degree in Leadership and Policy Studies with a concentration in School Administration and Supervision—a program leading to licensure as a K-12 school leader. Students completing the MS in Leadership and Policy Studies, School Administration and Supervision concentration will: (1) have developed their skills in leadership, change, policy formulation, the student's program and stewardship of a vision of effectiveness that is shared by others in the organization; (2) have had opportunities to analyze data and its relationship to organizational effectiveness; (3) have concentrated their studies in School Administration and Supervision.

### **Program Admission**

Each applicant must submit a completed application to the University Graduate School that includes:

1. Official transcripts for all prior undergraduate and graduate courses.
2. Letter of application inclusive of a brief statement of professional goals
3. Professional resume
4. Three letters of professional recommendation on letterhead (at least one letter must come from a school principle or school superintended the candidate works for)
5. Evidence of current teacher certification
6. The admission decision will be based on a holistic profile that includes information contained in the completed application packet described above. Interested applicants are encouraged to contact the departmental office to obtain additional information. All students seeking licensure must take the appropriate required examination at

the conclusion of their program. The deadline for submission of all application material is April 1 for the fall semester, and November 1 for the spring semester.

## Program Requirements

A minimum of 30 semester hours is required of all students to obtain the master's degree with concentration in school administration and supervision.

The following policies in the Department of Leadership are exceptions to the policies of the Graduate School:

- A maximum of six (6) hours of graduate transfer credit can be counted toward the concentration in School Administration and Supervision.

## Core Requirements (6 hours):

- LEAD 7000 - Intro To Educ Ldrshp \*\* Credit Hours: (3)  
and
- EDPR 7521 - Introduction to Research Design and Methodology \*\* Credit Hours: (3) (best suited for Student Affairs Administration concentration)  
or
- EDPR 7524 - Research Methods for School Accountability Credit Hours: (3) (best suited for the School Administration and Supervision Concentration)

## School Administration and Supervision Concentration (24 hours):

- LDPS 7141 - The Principalship \*\* Credit Hours: (3)
- LEAD 7004 - Instructional Leadership \*\* Credit Hours: (3)
- LDPS 7150 - Educational Law \*\* Credit Hours: (3)
- LDPS 7131 - School Business Mgmt Credit Hours: (1-3)
- LEAD 7210 - Field Experiences \*\* Credit Hours: (1-9)
- LDPS 7140 - Ldrshp Instructionl Improvmnt Credit Hours: (3)
- LDPS 7120 - Supervisory Process Credit Hours: (1-6)

## Administration/Supervision Licensure Program:

The department maintains a program leading to school administration licensure for students holding an appropriate master's degree. If the applicant already holds a master's degree in education and wishes to pursue licensure, the K-12 Educational Leadership certificate should be pursued.

## Leadership and Policy Studies - Student Affairs Administration, (MS)

### Master of Science (MS)

The Department offers the Master of Science degree in Leadership and Policy Studies with a concentration in Student Affairs Administration. Students completing the MS with Student Affairs Administration concentration will (1) have developed their skills in college student development, academic advising, program assessment, and college culture/multiculturalism; (2) have had

opportunities to analyze data and its relationship to organizational effectiveness; (3) have concentrated their studies in Student Affairs Administration.

## Program Admission

Each applicant must submit an application to the University Graduate School that includes:

1. Official transcripts for all prior undergraduate and graduate courses.
2. Letter of application, inclusive of a brief statement of professional goals.
3. Professional resume,
4. Three letters of recommendation,
5. The admission decision will be based on a holistic profile that includes, but is not limited to, information contained in the completed application described above.

Deadline for submission of all application material for the MS Student Personnel concentration is April 1 for fall semester, and November 1 for spring semester

All graduate students must comply with the general requirements of the Graduate School (see Admission Regulations, Academic Regulations, and Minimum Graduate Degree Requirements) as well as the program requirements of the degree being pursued.

## Program Requirements

A minimum of 36 semester hours is required of all students to obtain the master's degree.

The following policies in the Department of Leadership are exceptions to the policies of the Graduate School:

- A maximum of six (6) hours of transfer credit can be counted toward the concentration in School Administration and Supervision.

## Core Requirements (6 hours):

- LEAD 7000 - Intro To Educ Ldrshp \*\* Credit Hours: (3)  
and
- EDPR 7521 - Introduction to Research Design and Methodology \*\* Credit Hours: (3) (best suited for Student Affairs Administration concentration)  
or
- EDPR 7524 - Research Methods for School Accountability Credit Hours: (3) (best suited for the School Administration and Supervision Concentration)

## Student Affairs Administration Course Requirements (30 hours):

- HIAD 7440 - Stdnt Prsnl Svc High Ed \*\* Credit Hours: (3)
- HIAD 7443 - College Environments \*\* Credit Hours: (3)
- HIAD 7444 - Multiculturalism Coll Camp \*\* Credit Hours: (3)
- HIAD 7447 - Assessment in Higher Education Credit Hours: 3
- HIAD 7442 - College Student Dev \*\* Credit Hours: (3)
- HIAD 7210 - Foundations of Academic Advising Credit Hours: 3
- HIAD 7060 - Intrnshp Hi/Adult Ed \*\* Credit Hours: (1-6)

## Liberal Studies, (MALS)

### Master of Arts (MALS) Degree Program

The Master of Arts in Liberal Studies program at the University of Memphis allows students to customize an interdisciplinary course of study. The program is for those seeking the personal enrichment provided by liberal learning and the development of intellectual skills necessary to lifelong learning; critical reading, scholarly writing, and the art of interpersonal communication.

### Program Admission and Prerequisites

Applicants to the program are evaluated as they apply and may be admitted for the fall, spring or summer sessions. Application for admission to the program consists of the following steps:

1. Completion of an undergraduate degree with a grade point average of at least 2.75 on a 4.0 scale from an accredited college or university.
2. Application for admission to the Graduate School: The Graduate School at the University of Memphis accepts applications via electronic submission at [www.memphis.edu/admissions/apply.php](http://www.memphis.edu/admissions/apply.php)
3. Application Packet: Instructions for completing this step are available under the MALS admissions information link at [www.memphis.edu/univcoll/graduate/mals.php](http://www.memphis.edu/univcoll/graduate/mals.php).
4. Personal interview with the MALS Graduate Coordinator.

### Program Requirements:

Because each MALS student follows a unique course of study, students develop a contract with the College of Professional and Liberal Studies to create a program that satisfies both the interdisciplinary intent of the MALS program and the Graduate School's requirements for graduation.

At the time of admission to the MALS program, the Graduate Coordinator approves the student's course of study as reflected on the Coordinated Study Grid that accompanies the application essay. Students then enroll each semester in available courses from the approved plan. Within two weeks after the start of the final semester students must submit a final Program Contract that reiterates the approved academic goals (if necessary, reflecting any changes that have developed since admission) and identifies the Coordinated Study courses actually completed. Major deviations from the original approved plan require department pre-approval and will be addressed at the time of registration each semester.

The program requirements are:

1. Successful completion of the MALS degree requires thirty-three (33) credit hours, with a minimum of 24 credit hours at the 7000 level, twelve (12) of which are included in the MALS core.
2. The MALS core is required of all students, and consists of twelve (12) credit hours including UNIV 7000 - Fndtns Liberal Studies \*\*, UNIV 7100 - Rsrch/Intrdiscipl Study \*\*, UNIV 7200 - Liberal Studies Sem \*\*, and UNIV 7997 - Special Project \*\*.
3. The Coordinated Study is comprised of twenty-one (21) credit hours selected from two or more disciplines, with a maximum of 12 credit hours from any one discipline. At least 12 hours must be 7000-level courses. No more than six (6) credit hours may be from non-core UNIV courses, including UNIV 7796 - Independent Study and/or UNIV 7110 - Internship.
4. Transfer credit is limited to twelve (12) semester hours. Credit previously earned at another university must be presented for evaluation not later than the end of the student's second semester of enrollment.
5. Successful completion of UNIV 7997 - Special Project \*\*, followed by an oral comprehensive examination.

## Master of Health Administration, (MHA)

## Master of Health Administration (MHA) Program

Mark Hendricks, MHA  
Interim MHA Program Director  
mdhndrck@memphis.edu  
901.678.2883

The University of Memphis Master of Health Administration (MHA) program is a nationally-ranked program with an award-winning emphasis on leadership and professional development. The MHA Program in the School of Public Health has been continuously accredited by the Commission on Accreditation of Healthcare Management Education (CAHME) since 1995. It is the only CAHME-accredited program in the State of Tennessee. The MHA degree program educates students interested in preparing for or furthering careers in a variety of healthcare settings, including hospital, ambulatory care, and managed care organizations. The program combines interdisciplinary academic preparation with health industry experience.

The 53-credit hour on-campus track can be completed full-time in two academic years (21 months) or part-time in as few as three years. Evening classes accommodate both full- and part-time students. Our online, Executive MHA Program prepares those with five or more years of experience to enhance their competencies and career opportunities.

The University of Memphis MHA provides a comprehensive, competency-based education to prepare future leaders in Health Administration. Our 19 competencies are focused on preparing future leaders in the domains of Leadership, Communication, Critical Thinking, Science/Analysis, and Management.

### Program Admission

Applicants must receive favorable endorsement from the health administration faculty. Admission will be based on applicable test scores (Graduate Record Examination [GRE] or Graduate Management Aptitude Test [GMAT]); undergraduate grade point average; previous education and/or experience; and an ability to articulate career goals and education objectives via a letter of intent. Two letters of recommendation are also required, one of which should be from a professor or instructor familiar with the student's prior academic history and abilities.

Applicants already holding a doctoral degree or its professional equivalent obtained in the United States may be exempt from the GRE requirement. Professional school standardized test scores (MCAT, DAT, and LSAT) taken in the past five years may be substituted for the GRE by applicants who are enrolled in or who have already earned post-baccalaureate degrees in areas such as medicine, dentistry, or law.

Applicants whose native language is not English are required to submit acceptable scores on the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

### Program Prerequisites

Students are accepted from all undergraduate disciplines and professional areas; however, the program determines if students must successfully complete up to nine hours of prerequisite course work before being fully admitted into the program.

### Program Requirements

The student is required to complete a minimum of forty-five (45) semester hours. Forty-five (45) hours are taken in the core curriculum. The comprehensive examination (HADM 7210) must be successfully completed during the semester in which the student expects to graduate.

### Core Courses

- HADM 7102 - Health Care Law \*\* Credit Hours: (3)
- HADM 7103 - Health Planning \*\* Credit Hours: (3)
- HADM 7105 - Hlth Policy & Org Hlth Svcs \*\* Credit Hours: (3)
- HADM 7108 - Health Care Finance I \*\* Credit Hours: (3)
- HADM 7109 - Health Information Systems \*\* Credit Hours: (3)
- HADM 7110 - Leadershp/Org Chg in Hlth Care \*\* Credit Hours: (3)
- HADM 7116 - Adm Health Serv Orgs \*\* Credit Hours: (3)
- HADM 7204 - Healthcare Qual & Outcms Mgmt \*\* Credit Hours: (3)
- HADM 7140 - Population Health Management \*\* Credit Hours: (3)
- HADM 7208 - Health Care Finance II \*\* Credit Hours: (3)
- HADM 7209 - Quant Methods for Hlth Svcs \*\* Credit Hours: (3)
- HADM 7210 - Comp Expr/Hlth Care Mgmt Credit Hours: (3)
- HADM 7605 - Human Resources Admin \*\* Credit Hours: (3)
- PUBH 7502 - Hlth Policy, Theory & Methods Credit Hours: (3)
- HADM 7190 - Internship Hlth Admn I Credit Hours: (1-6)

## Retention Requirements

All students enrolled in the MHA program are expected to attain high academic achievement in all courses taken. The following criteria will be used to determine retention status of students:

Students having been admitted unconditionally who maintain a cumulative GPA of 3.00 or higher will be considered in good standing if not more than 2 (two) grades of 2.00 or lower have been earned.

Students must maintain a GPA of 3.00. In accordance with the Graduate School guidelines, any student not meeting this requirement will be placed on probation. The MHA Program Director will review each student's academic record to determine whether to request permission from the Graduate School to allow a student who has not maintained a 3.00 GPA to continue to enroll in classes while on probation. The MHA Program Director must approve courses for a student on probation. Probationary status continues even if the student has a grade under appeal. If a student remains on probation for two consecutive semesters or remains on probation after taking three courses (9 semester hours) without raising the overall GPA to 3.00, the student will be suspended from the program. Appeals of suspension must be submitted in writing to the MHA Program Director.

A student who has been suspended from the MHA program will be denied enrollment in MHA and PUBH courses subsequent to suspension.

Elective courses applied to the MHA program requirements must have the advisor's approval.

## Master of Nonprofit Management, (MNM)

Master of Nonprofit Administration (MNM) Degree Program offers tracks in social justice or fundraising and philanthropy.

### Program Admission

Applicants must satisfy admission requirements of the Graduate School and receive favorable endorsement from the public administration faculty. Admission will be based on:

1. Undergraduate grade point average of 3.0 or higher.
2. Previous education and/or experience via a resume.
3. Two letters of reference.

4. Ability to articulate career goals and education objectives via a personal statement.
5. OPTIONAL. Standardized Examination (not required for acceptance into program).

Inquiries can be directed to [mpa\\_admissions@memphis.edu](mailto:mpa_admissions@memphis.edu)

## Program Requirements

Students are required to complete a minimum of thirty-nine (39) semester hours. Twenty-four (24) hours are taken in the core curriculum; twelve (12) hours of electives, plus a three (3) hour internship or field project. An individual course plan is designed for each student and approved by the student's academic advisor, and can follow either a generalist course of study, or focus on one of two tracks: social justice, or fundraising and philanthropy.

The core curriculum is as follows:

- PADM 7641 - Thry/Prac Nonprofit Adm \*\* Credit Hours: (3)
- PADM 7642 - Res Dev Nonprofit Org \*\* Credit Hours: (3)
- PADM 7643 - Semn Nonprofit Adm&Philanth \*\* Credit Hours: (3)
- PADM 7644 - Nonprofit Branding and Storytelling Credit Hours: 3
- PADM 7601 - Research Methods Credit Hours: (3)
- PADM 7605 - Human Resources Admin \*\* Credit Hours: (3)
- PADM 7612 - Program/Policy Evaltn Credit Hours: (3)
- PADM 7607 - Public Mgmt Leadership Credit Hours: (3)

## Other Requirements

1. The capstone project must be successfully completed during the calendar year in which the student expects to graduate. Students must also successfully complete PADM 7607 - Public Mgmt Leadership, during the calendar year in which the student expects to graduate.
2. Preservice students must enroll in PADM 7610 Internship Public Admin (3 Hours) and the internship placement should relate to the student's concentration and career goals. Students must complete a minimum of 18 semester hours prior to enrollment in PADM 7610. Midcareer students may substitute a 3 credit hour Independent Study or other elective.

## Non-Degree-Seeking Students

If a student has taken graduate courses at The University of Memphis as a non-degree-seeking student, the student may apply a maximum of 9 credit hours toward his/her degree requirements. The grade in each course applied must be at least a "3.00." The Coordinator of Graduate Studies must approve all course work taken as a non-degree-seeking student.

## Master of Public Health - Biostatistics Concentration, (MPH)

### Master of Public Health (MPH) Degree Program

Vikki Nolan, DSc, MPH

*Associate Professor, Assistant Dean, MPH Coordinator*

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The mission of the CEPH accredited Master of Public Health (MPH) program is to provide a stimulating academic environment in a metropolitan setting that supports excellence and innovation in education, research, and service to enhance the lives and health of individuals, families, and communities in the Mid-South. Program objectives are: (1) Prepare future leaders in the field of public health by providing the highest quality education and practice opportunities in theories, approaches, methods, and other substantive issues pertinent to public health; (2) Create and nurture an environment conducive to interdisciplinary public health initiatives, with special emphasis on vulnerable populations who suffer disproportionately from illness and disability; (3) Pursue innovative and rigorous research on critical public health issues to prevent disease and injury, promote well-being, and foster overall physical and mental health; (4) Stimulate collaboration with the community to develop effective partnerships in combating the health challenges in our communities, city, state, and region; and (5) Inform public policy, disseminate health information, and increase awareness of public health concerns through disease surveillance, needs assessments, and program evaluation.

## Program Admission

A multi-disciplinary faculty admissions committee determines admission to the MPH program. Criteria for the selection process are broad because of the wide range of backgrounds from which students may apply. Prior background in public health or health care is not necessary for admission but may be considered in the admission process. The following is necessary for application:

Applicants must hold a bachelor or graduate degree from an accredited college or university with an undergraduate cumulative grade point average of 3.00 or higher (on a 4.00 scale) or a graduate cumulative grade point average of 3.5 or higher in the major subject area. Current Graduate Record Examination (GRE) scores from within the past five years are required.

Applicants already holding a doctoral degree or its professional equivalent obtained in the United States may be exempt from the GRE requirement. Professional school standardized test scores (e.g. MCAT, DAT, LSAT, etc.) may be substituted for the GRE by applicants who are enrolled in or who have already earned post-baccalaureate degrees in areas such as medicine, dentistry, or law. Applicants whose native language is not English are required to submit acceptable scores on the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

Letters of recommendation from at least three persons familiar with the applicant's academic background or experience in public health related issues, specifying in detail the applicant's capabilities for graduate study and for future performance as a public health professional, are required. At least one letter from a former professor or instructor is required.

Applicants must also submit a statement of purpose in approximately 400-500 words indicating his or her present interests and career goals, including why s/he wants to pursue an MPH degree.

## Program Prerequisites

All MPH applicants will be expected to have adequate preparation in the sciences, including at least one college-level course in general biology (including human biology), mathematics (e.g., calculus or algebra), and a social science (e.g., sociology, anthropology, or psychology). Basic computer skills are also expected. Courses in health-related fields such as anatomy, physiology, nutrition, chemistry, physics, and statistics are not mandated, but are strongly recommended. Previous professional or other relevant work experience is also highly desirable, but not required.

## Program Requirements:

Completion of a total of 42 hours, including 18 hours of core course requirements; 9 hours of electives, 3 hours of practicum/field experience, and 3 hours of a culmination experience in the form of either a thesis or master's project seminar. Students may choose a concentration in any of the following areas: Biostatistics, Epidemiology, Health Systems Management, Social and Behavioral Sciences, or Urban Health. They may also choose to have a Generalist MPH degree.



### Core courses include:

- HADM 7105 - Hlth Policy & Org Hlth Svs \*\* Credit Hours: (3)
- PUBH 7120 - Environmental Health I \*\* Credit Hours: (3)
- PUBH 7150 - Biostatistical Methods I \*\* Credit Hours: (3)
- PUBH 7160 - Soc/Behav Science Principles \*\* Credit Hours: (3)
- PUBH 7170 - Epidemiology in PUBH I\*\* Credit Hours: (3)
- PUBH 7180 - Foundations of PUBH \*\* Credit Hours: (3)

### Concentration courses include:

#### Biostatistics

- PUBH 7309 - Appl Surv Analys in Pub Hlth Credit Hours: (3)
- PUBH 7311 - Appl Categorical Data Analys Credit Hours: (3)
- PUBH 7152 - Biostatistical Methods II \*\* Credit Hours: (3)
- PUBH 7310 - Mixed Model Regression Analys Credit Hours: (3)

### Electives (9 hours)

Elective courses applied to the MPH program requirements must have the advisor's approval.

Possible electives include courses within the concentration areas as well as:

- BIOL 7080 - Public Health Microbiol Credit Hours: (3)
- COMM 7012 - Seminar Health Comm \*\* Credit Hours: (3)
- HADM 7107 - Health Care Ethics Credit Hours: (3)
- HADM 7109 - Health Information Systems \*\* Credit Hours: (3)
- NUTR 6602 - Community Nutrition Credit Hours: (3)
- NUTR 6902 - Study Tour/Foods/Nutr Credit Hours: (1-3)
- PUBH 7104 - Large Data Sets/PUBH Research Credit Hours: (3)
- PUBH 7310 - Mixed Model Regression Analys Credit Hours: (3)
- PUBH 7311 - Appl Categorical Data Analys Credit Hours: (3)
- PUBH 7334 - Comm Based Part Resrch Mthds Credit Hours: (3)
- PUBH 7337 - Public Health Nutrition Credit Hours: (3)
- PUBH 7338 - Critical Issues in Global Hlth \*\* Credit Hours: (3)
- PUBH 7340 - Behavioral Intervention Develp \*\* Credit Hours: (3)
- PUBH 7345 - Health Literacy Credit Hours: (3)
- PUBH 7347 - Qualitative Mtds Hlth Research Credit Hours: (3)
- PUBH 7445 - Genetic Epidemiology Credit Hours: (3)
- PUBH 7450 - Randomized Clinical Trials I Credit Hours: (3)
- PUBH 7190 - Adv SAS for PUBH Prof 1 Credit Hours: (3)
- PUBH 7191 - Adv SAS for PUBH Prof II Credit Hours: (3)
- PUBH 7501 - Health Systems Organizations Credit Hours: (3)

- PUBH 7502 - Hlth Policy, Theory & Methods **Credit Hours: (3)**
- SOCI 7853 - Gender And Health **Credit Hours: (3)**
- PUBH 7309 - Appl Surv Analys in Pub Hlth **Credit Hours: (3)**

## Note:

Other courses may serve as electives; students should check with their advisors

## Other Requirements

Satisfy completion of PUBH 7985 - Practicum/Field Experience \*\* (3)

Satisfy completion of PUBH 7996 - Thesis (3) or PUBH 7992 - Master's Project Seminar \*\* (3).

NOTE: Students choosing the thesis option should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

Pass comprehensive examination.

## MPH online course notes

\*\* denotes courses that may be available online.

## Retention Requirements

All students enrolled in the MPH program are expected to attain high academic achievement in all courses taken. The following criteria will be used to determine retention status of students:

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A student who has been suspended from the MPH program will be denied enrollment in PUBH courses after suspension.

## Master of Public Health - Environmental Health Concentration, (MPH)

### Master of Public Health (MPH) Degree Program

Vikki Nolan, DSc, MPH

*Associate Professor, Assistant Dean, MPH Coordinator*

228 Robison Hall

901.678.1696

Email: vgnolan @memphis.edu

The mission of the CEPH accredited Master of Public Health (MPH) program is to provide a stimulating academic environment in a metropolitan setting that supports excellence and innovation in education, research, and service to enhance the lives and health of individuals, families, and communities in the Mid-South. Program objectives are: (1) Prepare future leaders in the field of public health by providing the highest quality education and practice opportunities in theories, approaches, methods, and other substantive issues pertinent to public health; (2) Create and nurture an environment conducive to interdisciplinary public health initiatives, with special emphasis on vulnerable populations who suffer disproportionately from illness and disability; (3) Pursue innovative and rigorous research on critical public health issues to prevent disease and injury, promote well-being, and foster overall physical and mental health; (4) Stimulate collaboration with the community to develop effective partnerships in combating the health challenges in our communities, city, state, and region; and (5) Inform public policy, disseminate health information, and increase awareness of public health concerns through disease surveillance, needs assessments, and program evaluation.

## Program Admission

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### Core courses include:

- HADM 7105 - Hlth Policy & Org Hlth Svs \*\* Credit Hours: (3)
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- PUBH 7150 - Biostatistical Methods I \*\* Credit Hours: (3)
- PUBH 7160 - Soc/Behav Science Principles \*\* Credit Hours: (3)
- PUBH 7170 - Epidemiology in PUBH I\*\* Credit Hours: (3)
- PUBH 7180 - Foundations of PUBH \*\* Credit Hours: (3)

### Concentration courses include:

#### Environmental Health

- PUBH 7124 - Environmental Toxicology \*\* Credit Hours: (3)
- PUBH 7128 - Envrnmnt Policy/DecisionMaking \*\* Credit Hours: (3)
- PUBH 7129 - Envrnmntl Sampling & Analysis \*\* Credit Hours: (3)
- PUBH 7126 - Prin Exposure/Risk Assessmnt \*\* Credit Hours: (3)

### Electives (9 hours)

Elective courses applied to the MPH program requirements must have the advisor's approval.

Possible electives include courses within the concentration areas as well as:

- BIOL 7080 - Public Health Microbiol Credit Hours: (3)
- COMM 7012 - Seminar Health Comm \*\* Credit Hours: (3)
- HADM 7107 - Health Care Ethics Credit Hours: (3)
- HADM 7109 - Health Information Systems \*\* Credit Hours: (3)
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- NUTR 6902 - Study Tour/Foods/Nutr Credit Hours: (1-3)
- PUBH 7104 - Large Data Sets/PUBH Research Credit Hours: (3)
- PUBH 7310 - Mixed Model Regression Analys Credit Hours: (3)
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- PUBH 7501 - Health Systems Organizations Credit Hours: (3)

- PUBH 7502 - Hlth Policy, Theory & Methods **Credit Hours: (3)**
- SOCI 7853 - Gender And Health **Credit Hours: (3)**
- PUBH 7309 - Appl Surv Analys in Pub Hlth **Credit Hours: (3)**

## Note:

Other courses may serve as electives; students should check with their advisors

## Other Requirements

Satisfy completion of PUBH 7985 - Practicum/Field Experience \*\* (3)

Satisfy completion of PUBH 7996 - Thesis (3) or PUBH 7992 - Master's Project Seminar \*\* (3).

NOTE: Students choosing the thesis option should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

Pass comprehensive examination.

## MPH online course notes

\*\* denotes courses that may be available online.

## Retention Requirements

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## **Master of Public Health - Epidemiology Concentration, (MPH)**

### Master of Public Health (MPH) Degree Program

Vikki Nolan, DSc, MPH

*Associate Professor, Assistant Dean, MPH Coordinator*

228 Robison Hall

901.678.1696

Email: vgnolan @memphis.edu

The mission of the CEPH accredited Master of Public Health (MPH) program is to provide a stimulating academic environment in a metropolitan setting that supports excellence and innovation in education, research, and service to enhance the lives and health of individuals, families, and communities in the Mid-South. Program objectives are: (1) Prepare future leaders in the field of public health by providing the highest quality education and practice opportunities in theories, approaches, methods, and other substantive issues pertinent to public health; (2) Create and nurture an environment conducive to interdisciplinary public health initiatives, with special emphasis on vulnerable populations who suffer disproportionately from illness and disability; (3) Pursue innovative and rigorous research on critical public health issues to prevent disease and injury, promote well-being, and foster overall physical and mental health; (4) Stimulate collaboration with the community to develop effective partnerships in combating the health challenges in our communities, city, state, and region; and (5) Inform public policy, disseminate health information, and increase awareness of public health concerns through disease surveillance, needs assessments, and program evaluation.

## Program Admission

A multi-disciplinary faculty admissions committee determines admission to the MPH program. Criteria for the selection process are broad because of the wide range of backgrounds from which students may apply. Prior background in public health or health care is not necessary for admission but may be considered in the admission process. The following is necessary for application:

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### Core courses include:

- HADM 7105 - Hlth Policy & Org Hlth Svs \*\* Credit Hours: (3)
- PUBH 7120 - Environmental Health I \*\* Credit Hours: (3)
- PUBH 7150 - Biostatistical Methods I \*\* Credit Hours: (3)
- PUBH 7160 - Soc/Behav Science Principles \*\* Credit Hours: (3)
- PUBH 7170 - Epidemiology in PUBH I\*\* Credit Hours: (3)
- PUBH 7180 - Foundations of PUBH \*\* Credit Hours: (3)

### Concentration courses include:

#### Epidemiology

- PUBH 7152 - Biostatistical Methods II \*\* Credit Hours: (3)
- PUBH 7141 - Epidemiologic Survey Method \*\* Credit Hours: (3)
- PUBH 7172 - Epidemiology PUBH II \*\* Credit Hours: (3)

#### Plus any one of the following 4 applied "topics " courses:

- PUBH 7140 - Epidemiology of Chronic Diseases Credit Hours: (3)
- PUBH 7174 - Epidemiology PUBH III Credit Hours: (3)
- PUBH 7442 - Cancer Epidemiology Credit Hours: (3)
- PUBH 7443 - Infectious Disease Epidemiology \*\* Credit Hours: (3)

### Electives (9 hours)

Elective courses applied to the MPH program requirements must have the advisor's approval.

Possible electives include courses within the concentration areas as well as:

- BIOL 7080 - Public Health Microbiol Credit Hours: (3)
- COMM 7012 - Seminar Health Comm \*\* Credit Hours: (3)
- HADM 7107 - Health Care Ethics Credit Hours: (3)
- HADM 7109 - Health Information Systems \*\* Credit Hours: (3)
- NUTR 6602 - Community Nutrition Credit Hours: (3)
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- PUBH 7104 - Large Data Sets/PUBH Research Credit Hours: (3)
- PUBH 7310 - Mixed Model Regression Analys Credit Hours: (3)
- PUBH 7311 - Appl Categorical Data Analys Credit Hours: (3)
- PUBH 7334 - Comm Based Part Resrch Mthds Credit Hours: (3)
- PUBH 7337 - Public Health Nutrition Credit Hours: (3)
- PUBH 7338 - Critical Issues in Global Hlth \*\* Credit Hours: (3)
- PUBH 7340 - Behavioral Intervention Develop \*\* Credit Hours: (3)
- PUBH 7345 - Health Literacy Credit Hours: (3)

- PUBH 7347 - Qualitative Mtds Hlth Research **Credit Hours: (3)**
- PUBH 7445 - Genetic Epidemiology **Credit Hours: (3)**
- PUBH 7450 - Randomized Clinical Trials I **Credit Hours: (3)**
- PUBH 7190 - Adv SAS for PUBH Prof 1 **Credit Hours: (3)**
- PUBH 7191 - Adv SAS for PUBH Prof II **Credit Hours: (3)**
- PUBH 7501 - Health Systems Organizations **Credit Hours: (3)**
- PUBH 7502 - Hlth Policy, Theory & Methods **Credit Hours: (3)**
- SOCI 7853 - Gender And Health **Credit Hours: (3)**
- PUBH 7309 - Appl Surv Analys in Pub Hlth **Credit Hours: (3)**

## Note:

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## Other Requirements

Satisfy completion of PUBH 7985 - Practicum/Field Experience \*\* (3)

Satisfy completion of PUBH 7996 - Thesis (3) or PUBH 7992 - Master's Project Seminar \*\* (3).

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Pass comprehensive examination.

## MPH online course notes

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## Retention Requirements

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## Master of Public Health - Generalist (MPH)



## Master of Public Health (MPH) Degree Program

Vikki Nolan, DSc, MPH  
*Associate Professor, Assistant Dean, MPH Coordinator*  
228 Robison Hall  
901.678.1696

Email: [vgnolan@memphis.edu](mailto:vgnolan@memphis.edu)

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- PUBH 7170 - Epidemiology in PUBH I\*\* Credit Hours: (3)
- PUBH 7180 - Foundations of PUBH \*\* Credit Hours: (3)

### Concentration courses include:

#### Generalist

- PUBH 7004 - Interdis Approach PH Challenge Credit Hours: (3)
- PUBH 7141 - Epidemiologic Survey Method \*\* Credit Hours: (3)
- HADM 7110 - Leadershp/Org Chg in Hlth Care \*\* Credit Hours: (3)

### Electives (9 hours)

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## Note:

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## **Master of Public Health - Social and Behavioral Sciences Concentration, (MPH)**

## Master of Public Health (MPH) Degree Program

Vikki Nolan, DSc, MPH  
*Associate Professor, Assistant Dean, MPH Coordinator*  
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Applicants already holding a doctoral degree or its professional equivalent obtained in the United States may be exempt from the GRE requirement. Professional school standardized test scores (e.g. MCAT, DAT, LSAT, etc.) may be substituted for the GRE by applicants who are enrolled in or who have already earned post-baccalaureate degrees in areas such as medicine, dentistry, or law. Applicants whose native language is not English are required to submit acceptable scores on the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

Letters of recommendation from at least three persons familiar with the applicant's academic background or experience in public health related issues, specifying in detail the applicant's capabilities for graduate study and for future performance as a public health professional, are required. At least one letter from a former professor or instructor is required.

Applicants must also submit a statement of purpose in approximately 400-500 words indicating his or her present interests and career goals, including why s/he wants to pursue an MPH degree.

### Program Prerequisites

All MPH applicants will be expected to have adequate preparation in the sciences, including at least one college-level course in general biology (including human biology), mathematics (e.g., calculus or algebra), and a social science (e.g., sociology, anthropology, or psychology). Basic computer skills are also expected. Courses in health-related fields such as anatomy, physiology, nutrition, chemistry, physics, and statistics are not mandated, but are strongly recommended. Previous professional or other relevant work experience is also highly desirable, but not required.

## Program Requirements:

Completion of a total of 42 hours, including 18 hours of core course requirements; 9 hours of electives, 3 hours of practicum/field experience, and 3 hours of a culmination experience in the form of either a thesis or master's project seminar. Students may choose a concentration in any of the following areas: Biostatistics, Epidemiology, Health Systems Management, Social and Behavioral Sciences, or Urban Health. They may also choose to have a Generalist MPH degree.

### Core courses include:

- HADM 7105 - Hlth Policy & Org Hlth Svs \*\* Credit Hours: (3)
- PUBH 7120 - Environmental Health I \*\* Credit Hours: (3)
- PUBH 7150 - Biostatistical Methods I \*\* Credit Hours: (3)
- PUBH 7160 - Soc/Behav Science Principles \*\* Credit Hours: (3)
- PUBH 7170 - Epidemiology in PUBH I\*\* Credit Hours: (3)
- PUBH 7180 - Foundations of PUBH \*\* Credit Hours: (3)

### Concentration courses include:

#### Social and Behavioral Sciences

- PUBH 7130 - Social Determinants of Health \*\* Credit Hours: (3)
- PUBH 7132 - Health Program Evaluation \*\* Credit Hours: (3)
- PUBH 7340 - Behavioral Intervention Develop \*\* Credit Hours: (3)

#### Plus any one of the following:

- PUBH 7014 - Public Health Communication Credit Hours: (3)
- PUBH 7345 - Health Literacy Credit Hours: (3)
- JRSM 7050 - Mass Comm Theory \*\* Credit Hours: (3)

### Electives (9 hours)

Elective courses applied to the MPH program requirements must have the advisor's approval.

Possible electives include courses within the concentration areas as well as:

- BIOL 7080 - Public Health Microbiol Credit Hours: (3)
- COMM 7012 - Seminar Health Comm \*\* Credit Hours: (3)
- HADM 7107 - Health Care Ethics Credit Hours: (3)
- HADM 7109 - Health Information Systems \*\* Credit Hours: (3)
- NUTR 6602 - Community Nutrition Credit Hours: (3)
- NUTR 6902 - Study Tour/Foods/Nutr Credit Hours: (1-3)
- PUBH 7104 - Large Data Sets/PUBH Research Credit Hours: (3)
- PUBH 7310 - Mixed Model Regression Analys Credit Hours: (3)
- PUBH 7311 - Appl Categorical Data Analys Credit Hours: (3)

- PUBH 7334 - Comm Based Part Resrch Mthds Credit Hours: (3)
- PUBH 7337 - Public Health Nutrition Credit Hours: (3)
- PUBH 7338 - Critical Issues in Global Hlth \*\* Credit Hours: (3)
- PUBH 7340 - Behavioral Intervention Develp \*\* Credit Hours: (3)
- PUBH 7345 - Health Literacy Credit Hours: (3)
- PUBH 7347 - Qualitative Mtds Hlth Research Credit Hours: (3)
- PUBH 7445 - Genetic Epidemiology Credit Hours: (3)
- PUBH 7450 - Randomized Clinical Trials I Credit Hours: (3)
- PUBH 7190 - Adv SAS for PUBH Prof 1 Credit Hours: (3)
- PUBH 7191 - Adv SAS for PUBH Prof II Credit Hours: (3)
- PUBH 7501 - Health Systems Organizations Credit Hours: (3)
- PUBH 7502 - Hlth Policy, Theory & Methods Credit Hours: (3)
- SOCI 7853 - Gender And Health Credit Hours: (3)
- PUBH 7309 - Appl Surv Analys in Pub Hlth Credit Hours: (3)

## Note:

Other courses may serve as electives; students should check with their advisors

## Other Requirements

Satisfy completion of PUBH 7985 - Practicum/Field Experience \*\* (3)

Satisfy completion of PUBH 7996 - Thesis (3) or PUBH 7992 - Master's Project Seminar \*\* (3).

NOTE: Students choosing the thesis option should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

Pass comprehensive examination.

## MPH online course notes

\*\* denotes courses that may be available online.

## Retention Requirements

All students enrolled in the MPH program are expected to attain high academic achievement in all courses taken. The following criteria will be used to determine retention status of students:

Students having been admitted unconditionally who maintain a cumulative GPA of 3.00 or higher will be considered in good standing if not more than 2 (two) grades of C+ or lower has been earned.

Students must maintain a GPA of 3.00. In accordance with the Graduate School guidelines, any student not meeting this requirement will be placed on probation. The MPH Coordinator will review each student's academic record to determine whether to request permission from the Graduate School to allow a student who has not maintained a 3.00 GPA to continue to enroll in classes while on probation. The MPH Coordinator must approve courses for a student on probation. Probationary status continues even if the student has a grade under appeal. If a student remains on probation for two consecutive semesters or remains on

probation after taking three courses (9 semester hours) without raising the overall GPA to 3.00, the student will be suspended from the program. Appeals of suspension must be submitted in writing to the MPH Coordinator.

A student who has been suspended from the MPH program will be denied enrollment in PUBH courses after suspension.

## **Master of Public Health - Urban Health Concentration, (MPH)**

### **Master of Public Health (MPH) Degree Program**

Vikki Nolan, DSc, MPH

*Associate Professor, Assistant Dean, MPH Coordinator*

228 Robison Hall

901.678.1696

Email: vgnolan @memphis.edu

The mission of the CEPH accredited Master of Public Health (MPH) program is to provide a stimulating academic environment in a metropolitan setting that supports excellence and innovation in education, research, and service to enhance the lives and health of individuals, families, and communities in the Mid-South. Program objectives are: (1) Prepare future leaders in the field of public health by providing the highest quality education and practice opportunities in theories, approaches, methods, and other substantive issues pertinent to public health; (2) Create and nurture an environment conducive to interdisciplinary public health initiatives, with special emphasis on vulnerable populations who suffer disproportionately from illness and disability; (3) Pursue innovative and rigorous research on critical public health issues to prevent disease and injury, promote well-being, and foster overall physical and mental health; (4) Stimulate collaboration with the community to develop effective partnerships in combating the health challenges in our communities, city, state, and region; and (5) Inform public policy, disseminate health information, and increase awareness of public health concerns through disease surveillance, needs assessments, and program evaluation.

### **Program Admission**

A multi-disciplinary faculty admissions committee determines admission to the MPH program. Criteria for the selection process are broad because of the wide range of backgrounds from which students may apply. Prior background in public health or health care is not necessary for admission but may be considered in the admission process. The following is necessary for application:

Applicants must hold a bachelor or graduate degree from an accredited college or university with an undergraduate cumulative grade point average of 3.00 or higher (on a 4.00 scale) or a graduate cumulative grade point average of 3.5 or higher in the major subject area. Current Graduate Record Examination (GRE) scores from within the past five years are required.

Applicants already holding a doctoral degree or its professional equivalent obtained in the United States may be exempt from the GRE requirement. Professional school standardized test scores (e.g. MCAT, DAT, LSAT, etc.) may be substituted for the GRE by applicants who are enrolled in or who have already earned post-baccalaureate degrees in areas such as medicine, dentistry, or law. Applicants whose native language is not English are required to submit acceptable scores on the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

Letters of recommendation from at least three persons familiar with the applicant's academic background or experience in public health related issues, specifying in detail the applicant's capabilities for graduate study and for future performance as a public health professional, are required. At least one letter from a former professor or instructor is required.

Applicants must also submit a statement of purpose in approximately 400-500 words indicating his or her present interests and career goals, including why s/he wants to pursue an MPH degree.

### **Program Prerequisites**

All MPH applicants will be expected to have adequate preparation in the sciences, including at least one college-level course in general biology (including human biology), mathematics (e.g., calculus or algebra), and a social science (e.g., sociology, anthropology, or psychology). Basic computer skills are also expected. Courses in health-related fields such as anatomy, physiology, nutrition, chemistry, physics, and statistics are not mandated, but are strongly recommended. Previous professional or other relevant work experience is also highly desirable, but not required.

## Program Requirements:

Completion of a total of 42 hours, including 18 hours of core course requirements; 9 hours of electives, 3 hours of practicum/field experience, and 3 hours of a culmination experience in the form of either a thesis or master's project seminar. Students may choose a concentration in any of the following areas: Biostatistics, Epidemiology, Health Systems Management, Social and Behavioral Sciences, or Urban Health. They may also choose to have a Generalist MPH degree.

### Core courses include:

- HADM 7105 - Hlth Policy & Org Hlth Svs \*\* Credit Hours: (3)
- PUBH 7120 - Environmental Health I \*\* Credit Hours: (3)
- PUBH 7150 - Biostatistical Methods I \*\* Credit Hours: (3)
- PUBH 7160 - Soc/Behav Science Principles \*\* Credit Hours: (3)
- PUBH 7170 - Epidemiology in PUBH I\*\* Credit Hours: (3)
- PUBH 7180 - Foundations of PUBH \*\* Credit Hours: (3)

### Concentration courses include:

#### Urban Health

- PUBH 7002 - Comm Hlth Assessmt & Prog Plan \*\* Credit Hours: (3)
- PUBH 7004 - Interdis Approach PH Challenge Credit Hours: (3)
- PUBH 7132 - Health Program Evaluation \*\* Credit Hours: (3)
- PUBH 7335 - Struct/Environ Iss/Urban Comm \*\* Credit Hours: (3)

#### Plus any one of the following:

- ANTH 6571 - Race and Health Disparities Credit Hours: (3)
- PUBH 6131 - Social Justice & Public Health Credit Hours: (3)
- PUBH 7130 - Social Determinants of Health \*\* Credit Hours: (3)

### MPH online course notes

\*\* denotes courses that may be available online.

## **Master of Public Health – Professional Degree – 12 months (MPH)**

### Master of Public Health (MPH) Degree Program



Vikki Nolan, DSc, MPH  
*Associate Professor, Assistant Dean, MPH Coordinator*  
228 Robison Hall  
901.678.1696

Email: vgnolan@memphis.edu

The mission of the CEPH accredited Master of Public Health (MPH) program is to provide a stimulating academic environment in a metropolitan setting that supports excellence and innovation in education, research, and service to enhance the lives and health of individuals, families, and communities in the Mid-South. Program objectives are: (1) Prepare future leaders in the field of public health by providing the highest quality education and practice opportunities in theories, approaches, methods, and other substantive issues pertinent to public health; (2) Create and nurture an environment conducive to interdisciplinary public health initiatives, with special emphasis on vulnerable populations who suffer disproportionately from illness and disability; (3) Pursue innovative and rigorous research on critical public health issues to prevent disease and injury, promote well-being, and foster overall physical and mental health; (4) Stimulate collaboration with the community to develop effective partnerships in combating the health challenges in our communities, city, state, and region; and (5) Inform public policy, disseminate health information, and increase awareness of public health concerns through disease surveillance, needs assessments, and program evaluation.

## Program Admission

A multi-disciplinary faculty admissions committee determines admission to the MPH program. Criteria for the selection process are broad because of the wide range of backgrounds from which students may apply. Prior background in public health or health care is not necessary for admission but may be considered in the admission process. The following is necessary for application:

Applicants must hold a bachelor or graduate degree from an accredited college or university with an undergraduate cumulative grade point average of 3.00 or higher (on a 4.00 scale) or a graduate cumulative grade point average of 3.5 or higher in the major subject area. Current Graduate Record Examination (GRE) scores from within the past five years are required.

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Letters of recommendation from at least three persons familiar with the applicant's academic background or experience in public health related issues, specifying in detail the applicant's capabilities for graduate study and for future performance as a public health professional, are required. At least one letter from a former professor or instructor is required.

Applicants must also submit a statement of purpose in approximately 400-500 words indicating his or her present interests and career goals, including why s/he wants to pursue an MPH degree.

## Program Prerequisites

All MPH applicants will be expected to have adequate preparation in the sciences, including at least one college-level course in general biology (including human biology), mathematics (e.g., calculus or algebra), and a social science (e.g., sociology, anthropology, or psychology). Basic computer skills are also expected. Courses in health-related fields such as anatomy, physiology, nutrition, chemistry, physics, and statistics are not mandated, but are strongly recommended. Previous professional or other relevant work experience is also highly desirable, but not required.

## Program Requirements:

Completion of a total of 42 hours, including 18 hours of core course requirements; 9 hours of electives, 3 hours of practicum/field experience, and 3 hours of a culmination experience in the form of either a thesis or master's project seminar. Students may choose a concentration in any of the following areas: Biostatistics, Epidemiology, Health Systems Management, Social and Behavioral Sciences, or Urban Health. They may also choose to have a Generalist MPH degree.

### Core courses include:

- HADM 7105 - Hlth Policy & Org Hlth Svs \*\* Credit Hours: (3)
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- PUBH 7170 - Epidemiology in PUBH I\*\* Credit Hours: (3)
- PUBH 7180 - Foundations of PUBH \*\* Credit Hours: (3)

### Electives (9 hours)

Elective courses applied to the MPH program requirements must have the advisor's approval.

Possible electives include courses within the concentration areas as well as:

- BIOL 7080 - Public Health Microbiol Credit Hours: (3)
- COMM 7012 - Seminar Health Comm \*\* Credit Hours: (3)
- HADM 7107 - Health Care Ethics Credit Hours: (3)
- HADM 7109 - Health Information Systems \*\* Credit Hours: (3)
- NUTR 6602 - Community Nutrition Credit Hours: (3)
- NUTR 6902 - Study Tour/Foods/Nutr Credit Hours: (1-3)
- PUBH 7104 - Large Data Sets/PUBH Research Credit Hours: (3)
- PUBH 7310 - Mixed Model Regression Analys Credit Hours: (3)
- PUBH 7311 - Appl Categorical Data Analys Credit Hours: (3)
- PUBH 7334 - Comm Based Part Resrch Mthds Credit Hours: (3)
- PUBH 7337 - Public Health Nutrition Credit Hours: (3)
- PUBH 7338 - Critical Issues in Global Hlth \*\* Credit Hours: (3)
- PUBH 7340 - Behavioral Intervention Develop \*\* Credit Hours: (3)
- PUBH 7345 - Health Literacy Credit Hours: (3)
- PUBH 7347 - Qualitative Mtds Hlth Research Credit Hours: (3)
- PUBH 7445 - Genetic Epidemiology Credit Hours: (3)
- PUBH 7450 - Randomized Clinical Trials I Credit Hours: (3)
- PUBH 7190 - Adv SAS for PUBH Prof 1 Credit Hours: (3)
- PUBH 7191 - Adv SAS for PUBH Prof II Credit Hours: (3)
- PUBH 7501 - Health Systems Organizations Credit Hours: (3)
- PUBH 7502 - Hlth Policy, Theory & Methods Credit Hours: (3)
- SOCI 7853 - Gender And Health Credit Hours: (3)
- PUBH 7309 - Appl Surv Analys in Pub Hlth Credit Hours: (3)

Note:

Other courses may serve as electives; students should check with their advisors

## Other Requirements

Satisfy completion of PUBH 7985 - Practicum/Field Experience \*\* (3)

Satisfy completion of PUBH 7996 - Thesis (3) or PUBH 7992 - Master's Project Seminar \*\* (3).

NOTE: Students choosing the thesis option should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

Pass comprehensive examination.

## MPH online course notes

\*\* denotes courses that may be available online.

## Retention Requirements

All students enrolled in the MPH program are expected to attain high academic achievement in all courses taken. The following criteria will be used to determine retention status of students:

Students having been admitted unconditionally who maintain a cumulative GPA of 3.00 or higher will be considered in good standing if not more than 2 (two) grades of C+ or lower has been earned.

Students must maintain a GPA of 3.00. In accordance with the Graduate School guidelines, any student not meeting this requirement will be placed on probation. The MPH Coordinator will review each student's academic record to determine whether to request permission from the Graduate School to allow a student who has not maintained a 3.00 GPA to continue to enroll in classes while on probation. The MPH Coordinator must approve courses for a student on probation. Probationary status continues even if the student has a grade under appeal. If a student remains on probation for two consecutive semesters or remains on probation after taking three courses (9 semester hours) without raising the overall GPA to 3.00, the student will be suspended from the program. Appeals of suspension must be submitted in writing to the MPH Coordinator.

A student who has been suspended from the MPH program will be denied enrollment in PUBH courses after suspension.

## Mathematical Sciences - Applied Mathematics Concentration, (MS)

### MS Degree Program

Program objectives are (1) development of thorough background in mathematical sciences, including retention and integration of core knowledge; (2) development of research skills in mathematics; and (3) development of interdisciplinary opportunities and good oral and written communication skills.

### General Program Prerequisites

1. An undergraduate degree with a major in mathematics or statistics is required. The minimum GPA is 2.5 on a 4.0 scale. Students whose major was not in mathematics or statistics will be considered on a case-by-case basis.
2. Letters of recommendation need to be submitted upon request.
3. IELTS or TOEFL scores are required for students whose native language is not English.

## General Program Requirements

1. Satisfactory completion of 33 credit hours of graduate course work in a program approved by the department is required. Not more than 9 hours of course work at the 6000 level can be applied to the degree. At least 24 credit hours of course work have to be at the 7000 level or higher. At least 21 credit hours of course work have to be earned from courses offered by the Department of Mathematical Sciences.
2. Not more than three credit hours from graduate level seminars can be used to satisfy degree requirements.
3. The courses MATH 6050, MATH 6051, MATH 7281, MATH 7282, MATH 7383, MATH 7384, MATH 7385, MATH 7391, and MATH 7601 can only be used to satisfy degree requirements in the Teaching of Mathematics concentration.
4. A passing grade on a comprehensive examination is required. Students may choose a thesis or non-thesis option.

## Non-thesis Option

Under this option the comprehensive examination consists of the student preparing and giving a master's presentation with a short, written summary on the topic of an independent study project, carried out under the guidance of a faculty member. The topic of the project must be approved in advance by a designated committee of graduate faculty. The master's presentation includes the opportunity for questions and is given before the committee of graduate faculty charged with assessing the satisfactory completion of the comprehensive examination requirement.

An acceptable alternative to the master's presentation requirement is the satisfactory performance on the Ph.D. qualifying exams. A performance on these exams deemed satisfactory at the master's level will be counted as passing the comprehensive examination.

## Thesis Option

Each student must identify a thesis advisor, enroll in at least three credit hours of MATH 7996 and submit a written thesis acceptable to the student's advisory committee. A student must present and defend the thesis before the advisory committee. The oral defense of the thesis will encompass material contained in the thesis and learned during course work and will count as the comprehensive examination. Up to six credit hours of MATH 7996 can be used to satisfy degree requirements.

### Note:

Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

## Specific Degree Requirements

### Applied Mathematics Concentration

To ensure foundational knowledge, several 6000-level courses are required. If the corresponding 4000-level cognate of a required 6000-level course was taken for credit before, the 6000-level course need not be taken again. For that course the requirement is considered satisfied.

The following 6000-level courses are required:

- MATH 6242 - Linear Algebra
- Two of the following:
  - MATH 6350 - Intro Real Analysis I
  - MATH 6351 - Intro Real Analysis II

- MATH 6361 - Complex Variables
- Two of the following:
  - MATH 6083 - Dynamical Systems/Chaos
  - MATH 6120 - Ordinary Differtl Equations
  - MATH 6391 - Partial Diffmntl Equation I
  - MATH 6721 - Numerical Analysis

**To ensure in-depth knowledge in Applied Mathematics, several 7000-level courses are required. Corresponding 8000-level cognates may be used to substitute for 7000-level courses.**

At least 12 credit hours must be chosen from among the following 7000-level courses:

- MATH 7016 - Fourier Analysis Credit Hours: (3)
- MATH 7350 - Real Variables I Credit Hours: (3)
- MATH 7351 - Real Variables II Credit Hours: (3)
- MATH 7355 - Functional Analysis I Credit Hours: (3)
- MATH 7361 - Complex Analysis Credit Hours: (3)
- MATH 7371 - Calculus Of Variations Credit Hours: (3)
- MATH 7393 - Differl Equatns/App Credit Hours: (3)
- MATH 7395 - Theory Diff Equatns Credit Hours: (3)
- MATH 7501 - Nonlinear Wave Phenomena Credit Hours: (3)
- MATH 7502 - Semigroups of Linear Operators Credit Hours: (3)
- MATH 7503 - Semigroups Nonlinear Operators Credit Hours: (3)
- MATH 7504 - Partial Differential Equations Credit Hours: (3)
- MATH 7613 - Probability Theory Credit Hours: (3)

## **Mathematical Sciences - Mathematics Concentration, (MS)**

### **MS Degree Program**

Program objectives are (1) development of thorough background in mathematical sciences, including retention and integration of core knowledge; (2) development of research skills in mathematics; and (3) development of interdisciplinary opportunities and good oral and written communication skills.

### **General Program Prerequisites**

1. An undergraduate degree with a major in mathematics or statistics is required. The minimum GPA is 2.5 on a 4.0 scale. Students whose major was not in mathematics or statistics will be considered on a case-by-case basis.
2. Letters of recommendation need to be submitted upon request.
3. IELTS or TOEFL scores are required for students whose native language is not English.

### **General Program Requirements**

1. Satisfactory completion of 33 credit hours of graduate course work in a program approved by the department is required. Not more than 9 hours of course work at the 6000 level can be applied to the degree. At least 24 credit hours

of course work have to be at the 7000 level or higher. At least 21 credit hours of course work have to be earned from courses offered by the Department of Mathematical Sciences.

2. Not more than three credit hours from graduate level seminars can be used to satisfy degree requirements.
3. The courses MATH 6050, MATH 6051, MATH 7281, MATH 7282, MATH 7383, MATH 7384, MATH 7385, MATH 7391, and MATH 7601 can only be used to satisfy degree requirements in the Teaching of Mathematics concentration.
4. A passing grade on a comprehensive examination is required. Students may choose a thesis or non-thesis option.

## Non-thesis Option

Under this option the comprehensive examination consists of the student preparing and giving a master's presentation with a short, written summary on the topic of an independent study project, carried out under the guidance of a faculty member. The topic of the project must be approved in advance by a designated committee of graduate faculty. The master's presentation includes the opportunity for questions and is given before the committee of graduate faculty charged with assessing the satisfactory completion of the comprehensive examination requirement.

An acceptable alternative to the master's presentation requirement is the satisfactory performance on the Ph.D. qualifying exams. A performance on these exams deemed satisfactory at the master's level will be counted as passing the comprehensive examination.

## Thesis Option

Each student must identify a thesis advisor, enroll in at least three credit hours of MATH 7996 and submit a written thesis acceptable to the student's advisory committee. A student must present and defend the thesis before the advisory committee. The oral defense of the thesis will encompass material contained in the thesis and learned during course work and will count as the comprehensive examination. Up to six credit hours of MATH 7996 can be used to satisfy degree requirements.

### Note:

Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

## Specific Degree Requirements

### Mathematics Concentration

To ensure foundational knowledge, several 6000-level courses are required. If the corresponding 4000-level cognate of a required 6000-level course was taken for credit before, the 6000-level course need not be taken again. For that course the requirement is considered satisfied.

The following 6000-level courses are required:

- MATH 6242 - Linear Algebra
- Two of the following:
  - MATH 6350 - Intro Real Analysis I
  - MATH 6351 - Intro Real Analysis II
  - MATH 6361 - Complex Variables
- Two of the following:
  - MATH 6083 - Dynamical Systems/Chaos
  - MATH 6084 - Introduction to Graph Theory

- MATH 6085 - Introduction to Combinatorics
- MATH 6261 - Abstract Algebra
- MATH 6411 - Topology

To ensure in-depth knowledge in Mathematics, several 7000-level courses are required. Corresponding 8000-level cognates may be used to substitute for 7000-level courses.

At least 12 credit hours must be chosen from among the following 7000-level courses:

- MATH 7016 - Fourier Analysis Credit Hours: (3)
- MATH 7235 - Combinatorics Credit Hours: (3)
- MATH 7236 - Probabilistic Combinatorics Credit Hours: (3)
- MATH 7237 - Graph Theory Credit Hours: (3)
- MATH 7261 - Algebraic Theory I Credit Hours: (3)
- MATH 7262 - Algebraic Theory II Credit Hours: (3)
- MATH 7350 - Real Variables I Credit Hours: (3)
- MATH 7351 - Real Variables II Credit Hours: (3)
- MATH 7352 - Ergodic Theory Credit Hours: (3)
- MATH 7355 - Functional Analysis I Credit Hours: (3)
- MATH 7356 - Functional Analysis Credit Hours: (3)
- MATH 7361 - Complex Analysis Credit Hours: (3)
- MATH 7411 - Point Set Topology Credit Hours: (3)
- MATH 7613 - Probability Theory Credit Hours: (3)

## Mathematical Sciences - Statistics Concentration, (MS)

### MS Degree Program

Program objectives are (1) development of thorough background in mathematical sciences, including retention and integration of core knowledge; (2) development of research skills in mathematics; and (3) development of interdisciplinary opportunities and good oral and written communication skills.

### General Program Prerequisites

1. An undergraduate degree with a major in mathematics or statistics is required. The minimum GPA is 2.5 on a 4.0 scale. Students whose major was not in mathematics or statistics will be considered on a case-by-case basis.
2. Letters of recommendation need to be submitted upon request.
3. IELTS or TOEFL scores are required for students whose native language is not English.

### General Program Requirements

1. Satisfactory completion of 33 credit hours of graduate course work in a program approved by the department is required. Not more than 9 hours of course work at the 6000 level can be applied to the degree. At least 24 credit hours of course work have to be at the 7000 level or higher. At least 21 credit hours of course work have to be earned from courses offered by the Department of Mathematical Sciences.
2. Not more than three credit hours from graduate level seminars can be used to satisfy degree requirements.

3. The courses MATH 6050, MATH 6051, MATH 7281, MATH 7282, MATH 7383, MATH 7384, MATH 7385, MATH 7391, and MATH 7601 can only be used to satisfy degree requirements in the Teaching of Mathematics concentration.
4. A passing grade on a comprehensive examination is required. Students may choose a thesis or non-thesis option.

## Non-thesis Option

Under this option the comprehensive examination consists of the student preparing and giving a master's presentation with a short, written summary on the topic of an independent study project, carried out under the guidance of a faculty member. The topic of the project must be approved in advance by a designated committee of graduate faculty. The master's presentation includes the opportunity for questions and is given before the committee of graduate faculty charged with assessing the satisfactory completion of the comprehensive examination requirement.

An acceptable alternative to the master's presentation requirement is the satisfactory performance on the Ph.D. qualifying exams. A performance on these exams deemed satisfactory at the master's level will be counted as passing the comprehensive examination.

## Thesis Option

Each student must identify a thesis advisor, enroll in at least three credit hours of MATH 7996 and submit a written thesis acceptable to the student's advisory committee. A student must present and defend the thesis before the advisory committee. The oral defense of the thesis will encompass material contained in the thesis and learned during course work and will count as the comprehensive examination. Up to six credit hours of MATH 7996 can be used to satisfy degree requirements.

### Note:

Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

## Specific Degree Requirements

### Statistics Concentration

The following courses are required:

- MATH 6636 - Intro Statistical Theory **Credit Hours: (3)**
- MATH 7642 - Experimental Design **Credit Hours: (3)**
- MATH 7643 - Least Sq/Regr Analysis **Credit Hours: (3)**
- MATH 7647 - Non-Param Stat Meth **Credit Hours: (3)**
- MATH 7654 - Inference Theory **Credit Hours: (3)**
- MATH 7685 - Simulation & Computing **Credit Hours: (3)**
- MATH 7762 - Survival Analysis **Credit Hours: (3)**

The following elective courses are required:

- Either  
MATH 7645 - Sampling Techniques **Credit Hours: (3)**  
or



- MATH 7657 - Multivar Stat Meth **Credit Hours: (3)**  
and either
- MATH 7660 - App Time Series Analy **Credit Hours: (3)**  
or
- MATH 7670 - App Stochastic Models **Credit Hours: (3)**

## Credit for

Credit for both MATH 6637 and MATH 7643 is not permitted.

The written comprehensive examination for students choosing the non-thesis option includes as topics:

- MATH 6636 - Intro Statistical Theory **Credit Hours: (3)**
- MATH 7654 - Inference Theory **Credit Hours: (3)**
- Two additional courses approved by the department.

## Students choosing the thesis option

Students choosing the thesis option may replace either of the two electives (see b.) by three credit hours of MATH 7996.

- MATH 7996 - Thesis **Credit Hours: (1-6)**

## Mathematical Sciences - Teaching of Mathematics Concentration, (MS)

### MS Degree Program

Program objectives are (1) development of thorough background in mathematical sciences, including retention and integration of core knowledge; (2) development of research skills in mathematics; and (3) development of interdisciplinary opportunities and good oral and written communication skills.

### General Program Prerequisites

1. An undergraduate degree with a major in mathematics or statistics is required. The minimum GPA is 2.5 on a 4.0 scale. Students whose major was not in mathematics or statistics will be considered on a case-by-case basis.
2. Letters of recommendation need to be submitted upon request.
3. IELTS or TOEFL scores are required for students whose native language is not English.

### General Program Requirements

1. Satisfactory completion of 33 credit hours of graduate course work in a program approved by the department is required. Not more than 9 hours of course work at the 6000 level can be applied to the degree. At least 24 credit hours of course work have to be at the 7000 level or higher. At least 21 credit hours of course work have to be earned from courses offered by the Department of Mathematical Sciences.
2. Not more than three credit hours from graduate level seminars can be used to satisfy degree requirements.

3. The courses MATH 6050, MATH 6051, MATH 7281, MATH 7282, MATH 7383, MATH 7384, MATH 7385, MATH 7391, and MATH 7601 can only be used to satisfy degree requirements in the Teaching of Mathematics concentration.
4. A passing grade on a comprehensive examination is required. Students may choose a thesis or non-thesis option.

## Non-thesis Option

Under this option the comprehensive examination consists of the student preparing and giving a master's presentation with a short, written summary on the topic of an independent study project, carried out under the guidance of a faculty member. The topic of the project must be approved in advance by a designated committee of graduate faculty. The master's presentation includes the opportunity for questions and is given before the committee of graduate faculty charged with assessing the satisfactory completion of the comprehensive examination requirement.

An acceptable alternative to the master's presentation requirement is the satisfactory performance on the Ph.D. qualifying exams. A performance on these exams deemed satisfactory at the master's level will be counted as passing the comprehensive examination.

## Thesis Option

Each student must identify a thesis advisor, enroll in at least three credit hours of MATH 7996 and submit a written thesis acceptable to the student's advisory committee. A student must present and defend the thesis before the advisory committee. The oral defense of the thesis will encompass material contained in the thesis and learned during course work and will count as the comprehensive examination. Up to six credit hours of MATH 7996 can be used to satisfy degree requirements.

### Note:

Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

## Specific Degree Requirements

### Teaching of Mathematics Concentration

The following courses are required:

- MATH 6050 - Transformational Geometry **Credit Hours: (3)**
- MATH 6051 - Postsecondary Proof Methods **Credit Hours: (3)**
- MATH 6614 - Probability/Statistics **Credit Hours: (3)**
- MATH 7281 - Foundations of Linear Algebra **Credit Hours: (3)**
- MATH 7282 - Foundations of Algebra **Credit Hours: (3)**
- MATH 7383 - Concepts of Calculus 1 **Credit Hours: (4)**
- MATH 7384 - Concepts of Calculus 2 **Credit Hours: (4)**
- MATH 7385 - Concepts of Multivariable Calculus **Credit Hours: (4)**
- MATH 7391 - Foundations of Differential Equations **Credit Hours: (3)**
- MATH 7601 - Postsecondary Statistics **Credit Hours: (3)**

## Mechanical Engineering, (MS)

## MS Degree Program

### Program Admission

The Herff College of Engineering has established uniform admission criteria that identify the pool of master's level applicants from which the department evaluates and recommends qualified applicants to be admitted.

Applicants whose highest degree is from a foreign university may be required to have their credentials evaluated by any credentialing agency listed on the National Association of Credential Evaluation Services (NACES) web site (<http://www.naces.org/members.html>). In addition, GRE is required of all applicants.

### Program Requirements

A more detailed description of the information listed below will be given by the Coordinator of Graduate Studies to students admitted into the Mechanical Engineering MS program.

#### Thesis Option:

Successful completion of 30 semester hours to include 6 hours in MECH 7996 for thesis and 3 hours each in MECH 7341 and MECH 7342. Of the remaining 18 hours, no more than 9 hours of 6000-level MECH courses or collateral courses may be used in satisfying degree requirements. Only courses in mathematics, the physical sciences, or another engineering discipline may serve as collateral courses; each course must receive prior approval by the departmental graduate coordinator for it to be used in satisfying degree requirements. With prior approval, up to 3 hours of 7000-level collateral courses may be used in satisfying degree requirements.

- MECH 7996 - Thesis **Credit Hours: (1-6)**
- MECH 7341 - Engineering Analysis I **Credit Hours: (3)**
- MECH 7342 - Engineering Analysis II **Credit Hours: (3)**

#### Non-Thesis Option:

Successful completion of 30 semester hours total to include 3 hours each in MECH 7341 and MECH 7342. Of the remaining 24 hours, no more than 9 hours in 6000 level MECH or collateral courses may be used in satisfying degree requirements. Only courses in mathematics, the physical sciences, or another engineering discipline may serve as collateral courses; each course must receive prior approval by the departmental graduate coordinator for it to be used in satisfying degree requirements. With prior approval, up to 3 hours of 7000-level collateral courses may be used in satisfying degree requirements. With prior approval, up to 3 hours of MECH 7992 may be used in satisfying degree requirements.

- MECH 7341 - Engineering Analysis I **Credit Hours: (3)**
- MECH 7342 - Engineering Analysis II **Credit Hours: (3)**
- MECH 7992 - Research Project **Credit Hours: (1-6)**

#### The department's graduate coordinator may approve transfer credit

The department's graduate coordinator may approve transfer credit of up to 12 credit hours previously earned at another institution. For these hours to be used in satisfying degree requirements, appropriate documentation must be provided by the student, and approval granted, not later than the end of the student's second semester of enrollment.

#### Students selecting the thesis option

Students selecting the thesis option will be required to complete an independent research project culminating in a masters thesis. Upon completion of the thesis, the student must successfully pass an oral examination to assess mastery of the thesis topic and to evaluate the student's knowledge in mechanical engineering. Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write.

## Students selecting the non-thesis option

Students selecting the non-thesis option must pass an oral comprehensive examination to demonstrate mastery of mechanical engineering topics commensurate with the degree to be awarded.

## Retention Policy

A student must maintain a GPA of 3.00 or higher throughout the program. If a student's GPA is below 3.0, that student will be on probation during the following semester. Failure to improve the GPA above 3.0 by the end of the probationary semester will result in dismissal from the program.

## Graduation Requirements

Refer to "Minimum Graduate Degree Requirements" for University graduation requirements.

## Music - Composition Concentration, (MMu)

### MMu Degree Program

#### Program Admission

Admission requirements can be found on this catalog's page for the Rudi E. Scheidt School of Music. Additional information can be found in the School of Music Graduate Handbook.

#### Program Requirements (32 Hours)

The individual program of study is determined as a cooperative effort between the student and his or her advisor.

#### Bibliography (3 hours)

- MUHL 7400 - Bibliography & Research Methods **Credit Hours: (3)**

#### Music History and Music Theory (6 hours)

3 hours of music history and 3 hours of music theory. Any graduate music theory or history course may be used for this requirement with the exception of individual studies, pedagogy, or repertory courses.

#### Ensemble (2 hours)

#### Composition

## Applied Lessons (8 hours)

Taken over four semesters.

- MUTC 7501 - Composition **Credit Hours: (2-6)**

## Choose one of the following (3 hours)

- MUAP 7800 - Internship/Music Perform **Credit Hours: (1-6)**
- MUSE 7002 - Teaching Music in Higher Edu **Credit Hours: (3)**

## Approved Studies in Music (9 hours)

Approved Studies satisfy area-approved courses and are decided in consultation with the student's advisor.

## Practicum (1 hour)

- MUTC 7599 - Composition Practicum **Credit Hours: (3-6)**

## **Music - Conducting Concentration, (MMu)**

### MMu Degree Program

#### Program Admission

Admission requirements can be found on this catalog's page for the School of Music. Additional information can be found in the School of Music Graduate Handbook.

#### Program Requirements (32 Hours)

The individual program of study is determined as a cooperative effort between the student and his or her advisor.

#### Bibliography (3 hours)

- MUHL 7400 - Bibliography & Research Methods **Credit Hours: (3)**

#### Music History and Music Theory (6 hours)

3 hours of music history and 3 hours of music theory. Any graduate music theory or history course may be used for this requirement with the exception of individual studies, pedagogy, or repertory courses.

#### Ensemble (3 hours)

Ensemble as appropriate to conducting specialty (Wind, Orchestra, or University Singers)

## Applied Lessons (8 hours)

Taken over four semesters

- MUAP 7701 - Conducting **Credit Hours: (2-6)**

## Score Study and Aural Training (2 hours)

- MUAP 7703 - Score Study/Aural Train **Credit Hours: (2)**

## Choose one of the following (3 hours)

- MUAP 7800 - Internship/Music Perform **Credit Hours: (1-6)**
- MUSE 7002 - Teaching Music in Higher Edu **Credit Hours: (3)**

## Approved Studies in Music (6 hours)

Approved Studies satisfy area-approved courses and are decided in consultation with the student's advisor.

## Recital (1 hour)

- MUAP 7999 - Recital **Credit Hours: (1-3)**

## Note:

For students studying choral conducting, the conducting faculty will assess competence in vocal pedagogy, diction for the major choral languages, and foreign-language comprehension, and may assign remedial coursework as needed. Such coursework, if assigned at the undergraduate level, may be taken while enrolled in the Graduate School.

## **Music - Jazz and Studio Music Concentration, (MMu)**

### MMu Degree Program

#### Program Admission

Admission requirements can be found on this catalog's page for the School of Music. Additional information can be found in the School of Music Graduate Handbook.

#### Program Requirements (36 Hours)

The individual program of study is determined as a cooperative effort between the student and his or her advisor.

#### Bibliography (3 hours)

- MUHL 7400 - Bibliography & Research Methods **Credit Hours: (3)**

## Music History and Music Theory (6 hours)

3 hours of music history and 3 hours of music theory. Any graduate music theory or history course may be used for this requirement with the exception of individual studies, pedagogy, or repertory courses.

## Ensemble (4 hours)

Choose between Jazz Ensemble or Jazz Combo

- MUAP 7107 - Jazz Ensemble Credit Hours: (1)
- MUAP 7202 - Jazz Combo Credit Hours: (1)

## Applied Lessons (8 hours)

Lessons in performance, composition, and/or arranging taken over four semesters.

## Jazz and Studio Music (12 hours)

- MUTC 7010 - Adv Improv Pract/Mat Credit Hours: (3)
- MUHL 6806 - History Of Jazz Credit Hours: (3)
- MUSE 7520 - Jazz Pedagogy Credit Hours: (3)
- MUTC 7104 - Analytic Studies Jazz Credit Hours: (3)

## Choose one of the following (3 hours)

- MUAP 7999 - Recital Credit Hours: (1-3)
- MUID 7699 - Media Music Prod Prac Credit Hours: (3)
- MUHL 7996 - Thesis Credit Hours: (1-3)

## NOTE:

Students choosing the thesis option should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write.

## **Music - Music Education Concentration, (MMu)**

### MMu Degree Program

### Program Admission

Admission requirements can be found on this catalog's page for the School of Music. Additional information can be found in the School of Music Graduate Handbook.

### Program Requirements (32 Hours)

The individual program of study is determined as a cooperative effort between the student and his or her advisor.

### Music History and Music Theory (6 hours)

3 hours of music history and 3 hours of music theory. Any graduate music theory or history course may be used for this requirement with the exception of individual studies, pedagogy, or repertory courses.

### Ensemble (1 hour)

### Music Education (12 hours)

- MUSE 7220 - Research Music Education **Credit Hours: (3)**
- MUSE 7222 - Rsrch Appl Music Education \*\* **Credit Hours: (3)**
- MUSE 7402 - Hist Phil Music Ed \*\* **Credit Hours: (3)**
- MUSE 7404 - Assessment in Music Classroom \*\* **Credit Hours: (3)**

### Electives in Music, MUSE, or Education (10 hours)

### Choose one of the following (3 hours)

- MUSE 7996 - Thesis **Credit Hours: (1-3)**
- MUSE 7995 - Master's Project Music Ed \*\* **Credit Hours: (1-3)**

### NOTE:

Students choosing the thesis option should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write.

## Music - Musicology Concentration, (MMu)

### MMu Degree Program

#### Program Admission

Admission requirements can be found on this catalog's page for the School of Music. Additional information can be found in the School of Music Graduate Handbook.

### Program Requirements (32 Hours)

The individual program of study is determined as a cooperative effort between the student and his or her advisor.

### Bibliography (3 hours)

- MUHL 7400 - Bibliography & Research Methods **Credit Hours: (3)**



## Music Theory (3 hours)

Any graduate music theory course may be used for this requirement with the exception of individual studies, pedagogy, or repertory courses.

## Ensemble (2 hours)

## Music History (15 hours)

## Minor Concentration in Music (6 hours)

## Choose one of the following (3 hours)

- MUHL 7996 - Thesis **Credit Hours: (1-3)**
- MUHL 7995 - Master's Portfolio **Credit Hours: (1-3)**
- MUAP 7899 - Lecture Recital **Credit Hours: (1-3)**

## Note:

Students choosing the thesis option should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write.

## Reading knowledge of one foreign language

Reading knowledge of one foreign language, preferably German, must be demonstrated before graduation.

## Students taking the option of Lecture Recital

Students taking the option of Lecture Recital must have a minimum of one semester of individual lessons at the 6000 level.

## **Music - Orff-Schulwerk Concentration, (MMu)**

### MMu Degree Program

#### Program Admission

Admission requirements can be found on this catalog's page for the School of Music. Additional information can be found in the School of Music Graduate Handbook.

#### Program Requirements (33 Hours)

The individual program of study is determined as a cooperative effort between the student and his or her advisor.

#### Bibliography (3 hours)

- MUSE 7220 - Research Music Education **Credit Hours: (3)**

### Music History and Music Theory (6 hours)

3 hours of music history and 3 hours of music theory. Any graduate music theory or history course may be used for this requirement with the exception of individual studies, pedagogy, or repertory courses.

### Orff-Schulwerk (12 hours)

- MUSE 6802 - Level I Orff-Schulwerk **Credit Hours: (3)**
- MUSE 7103 - Level II Orff-Schulwrk **Credit Hours: (1-3)**
- MUSE 7104 - Level III Orff Schlwrk **Credit Hours: (3)**
- MUSE 7214 - Master Class Orff Schul **Credit Hours: (3)**

### Electives (9 hours)

Courses chosen from music education.

### Orff Practicum (3 hours)

- MUSE 7998 - Orff Practicum **Credit Hours: (1-3)**

## **Music - Pedagogy Concentration, (MMu)**

### MMu Degree Program

#### Program Admission

Admission requirements can be found on this catalog's page for the School of Music. Additional information can be found in the School of Music Graduate Handbook.

#### Program Requirements (34 Hours)

Performance (bass, bassoon, cello, clarinet, euphonium, flute, guitar, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice, woodwinds). The individual program of study is determined as a cooperative effort between the student and his or her advisor.

#### Bibliography (3 hours)

- MUHL 7400 - Bibliography & Research Methods **Credit Hours: (3)**

### Music History and Music Theory (6 hours)

3 hours of music history and 3 hours of music theory. Any graduate music theory or history course may be used for this requirement with the exception of individual studies, pedagogy, or repertory courses.

Ensemble (2 hours)

Applied Lessons (8 hours)

Taken over four semesters

Pedagogical Area (12 hours)

Choose one of the following (3 hours)

- MUAP 7999 - Recital **Credit Hours: (1-3)**
- MUSE 7996 - Thesis **Credit Hours: (1-3)**
- MUSE 7995 - Master's Project Music Ed \*\* **Credit Hours: (1-3)**

**NOTE:**

Students choosing the thesis option should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write.

## **Music - Performance Concentration, (MMu)**

MMu Degree Program

Program Admission

Admission requirements can be found on this catalog's page for the School of Music. Additional information can be found in the School of Music Graduate Handbook.

Program Requirements (32 Hours)

Performance (bass, bassoon, cello, clarinet, euphonium, flute, guitar, harpsichord, horn, multiple woodwind instrument, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice, woodwinds). The individual program of study is determined as a cooperative effort between the student and his or her advisor.

Bibliography (3 hours)

- MUHL 7400 - Bibliography & Research Methods **Credit Hours: (3)**

Music History and Music Theory (6 hours)

3 hours of music history and 3 hours of music theory. Any graduate music theory or history course may be used for this requirement with the exception of individual studies, pedagogy, or repertory courses.

## Ensemble (2 hours)

## Applied Music (8 hours)

Taken over four semesters.

## Choose one of the following (3 hours)

- MUAP 7800 - Internship/Music Perform **Credit Hours: (1-6)**
- MUSE 7002 - Teaching Music in Higher Edu **Credit Hours: (3)**

## Approved Studies in Music (9 hours)

Approved Studies satisfy area-approved courses and are decided in consultation with the student's advisor.

## Recital (1 hour)

- MUAP 7999 - Recital **Credit Hours: (1-3)**

## Note:

For students studying voice, a minimum of 3 undergraduate hours in each of French, German, and Italian; two semesters of song repertory; and one semester of vocal pedagogy are required. If such coursework has not been fulfilled during a student's undergraduate degree, it can be taken during his or her time in the Graduate School.

## Music Education (K-12), (MAT)

### MAT Program Admission

Applicants must complete admissions requirements to be admitted. **All admissions requirements must be met prior to being admitted into the MAT program.** MAT admission requirements are designed to be both competitive and selective, to be knowledge and performance-based, to be clear and consistent, to maintain diversity, and to meet or exceed undergraduate requirements and minimum state requirements.

To be admitted to the MAT program a candidate must complete an application through the Office of Graduate Admissions which includes an official transcript reflecting an earned bachelor's degree with a 2.75 or higher grade point average from an accredited institution. Applicants with a successful professional career may appeal this grade point average requirement. Documentation of a "successful professional career" is necessary and may include, but is not limited to, items such as an administrators' letter of recommendation, teacher evaluations, lesson plans, teaching video, etc.

### Teacher Education Program (TEP) Admission

1. Students who plan to pursue a graduate program of studies leading to teacher licensure must submit a formal application to the College of Education Teacher Education Program (TEP). Students are encouraged to apply for admission into TEP as soon as they enroll in any College of Education courses.
2. TEP admissions deadlines are September 15 for fall and January 31 for spring.
3. Requirements for provisional admission into TEP include:

1. A grade point average of 3.25 at the graduate level and undergraduate grade point average of 3.0 or higher;
  2. Pass all sections of the CORE Academic Skills for Educators;
  3. Pass the Praxis II Content Knowledge Exam required by the State of Tennessee for the licensure area being pursued.
  4. TBI Background Check
  5. Completion of teacher aptitude survey
4. Requirements for full admission to TEP must be completed prior to the Clinical Teaching Semester and/or the semester candidates enroll in ICL 7993. They include:
1. 3.25 graduate grade point average
  2. Passed Praxis II licensure exams

Passing scores on all required Praxis II Licensure Exams for Licensure and Graduation: Candidates participating in the Clinical Teaching Semester and/or ICL 7993 must submit a successful Teacher Performance Assessment (edTPA). Candidates who seek a Practitioner License must have a composite of 3.0 on the Teacher Evaluation used in their employing district.

Students must be provisionally admitted to the Teacher Education Program (TEP) before completing all Level I courses and starting Level II courses. (Level I Professional Core courses provide requisite foundations for teaching and should be completed before taking Level II Professional Specialization courses that focus on specialized strategies for teaching and learning in educational environments).

Students who do not apply to TEP or fail to maintain criteria during the program will not be allowed to continue in the program.

NOTE: MAT admission, TEP admission, and Graduate School admission are separate procedures.

## Program Requirements

Students seeking licensure and the MAT degree must take a minimum of 30-46 graduate semester hours, depending on program and licensure area. Minimum hours may increase depending on licensure requirements. Students who are employed by a school district on a Practitioner License may have the Level III (clinical teaching semester) waived if they provide the necessary documentation to verify one year of successful teaching experience in their area of licensure with a composite Teacher Evaluation Score of 3.0 or higher. Students in this category should contact the Teacher Education Office in 202 Ball Hall for specific requirements. Please note that all initial licensure candidates, including candidates who on a Job-Embedded Practitioners License, must take ICL 7993, either along with clinical teaching semester or the last semester before applying for license if working on a Practitioner License. This course serves as the culminating experience and will require successful completion of the Teacher Performance Assessment (edTPA) to be able to be recommended for licensure.

### Concentration Requirements:

- MUSE 7402 - Hist Phil Music Ed \*\* Credit Hours: (3)
- MUSE 6802 - Level I Orff-Schulwerk Credit Hours: (3)
- MUSE 7607 - Choral Rehearsal Tech \*\* Credit Hours: (3)
- MUSE 7608 - Instr Ens Rehearsl Tech \*\* Credit Hours: (3)

## **Nursing - Advanced Practice Nursing (Family Nurse Practitioner) Concentration, (MSN)**

### MSN Degree

### Admission

Because the University seeks to provide in as much as possible a reasonably safe environment for its health career students and their patients, students may be required during the course of the program to demonstrate their physical and/or emotional fitness to meet the essential requirements of the program. Such essential requirements include freedom from communicable diseases, the ability to perform certain physical tasks, and suitable emotional fitness. Any appraisal measures used to determine such physical and/or emotional fitness will be in compliance with Section 504 of the Rehabilitation Act of 1973 and the American with Disabilities Act of 1990, so as not to discriminate against any individual on the basis of disability.

Core performance standards for admission and progression:

1. Critical thinking ability sufficient for clinical judgment.
2. Interpersonal abilities sufficient to interact with individuals, families, and groups from a variety of social, emotional, cultural, and intellectual backgrounds.
3. Communication abilities sufficient for interaction with others in verbal and written form.
4. Physical abilities sufficient to move from room to room and maneuver in small spaces.
5. Gross and fine motor abilities sufficient to provide safe and effective nursing care.
6. Auditory ability sufficient to monitor and assess health needs.
7. Visual ability sufficient for observation and assessment necessary in nursing care.
8. Tactile ability sufficient for physical assessment.

## Admission Requirements

Admission to the program will be based on competitive selection from the pool of applicants. Multiple criteria will be used when considering applicant admission including, but not limited to, letter of interest, undergraduate and graduate grade point averages, professional experience, applicant interview, and letters of recommendation.

1. Admission Requirements for MSN Applicants:
  1. Admission to the University of Memphis Graduate School
  2. Admission to the Loewenberg College of Nursing graduate nursing program.
  3. An undergraduate minimum cumulative grade point average of 2.8 on a 4.0 scale.
  4. Letter of interest which discusses prior professional experience, future career goals, and reasons for pursuing graduate study.
  5. Letters of recommendation from three persons qualified and familiar to judge the applicant's academic and professional background and experience in nursing practice, specifying in detail the applicant's capabilities for graduate study and for future practice as an advanced practice nurse.
  6. Interview with LCON graduate faculty if requested by Admissions Committee.
  7. Submission of current professional resume
  8. Applicants for whom English is not their primary language are required to meet the University's minimum required TOEFL score: paper based 550 or greater; internet based 79; or 213 computer based.
  9. Eligibility to practice as a Registered Nurse in Tennessee or in an approved state in which the clinical assignments are completed. Appropriate licensure/authorization must be obtained during the first semester following admission to the program.
  10. Students transferring from another graduate nursing program must submit a letter of good standing and transcript from the dean/director of the previous nursing program.
  11. The standardized admission test is successful completion of the NCLEX licensing examination.
  12. Successful completion of 3 semester hour or 4 quarter hour undergraduate statistics course.
2. Admission Requirements for individuals with a BSN Degree
  1. Completion of BSN
  2. An unrestricted registered nursing license to practice in Tennessee or license to practice in an approved state in which clinical assignments are to be completed.
3. Admission Requirements for Registered Nurse Applicants with a BA/BS non-nursing major
  1. An unrestricted registered nursing license to practice in Tennessee or license to practice in an approved state in which clinical assignments are to be completed.
  2. Completion of a 9-unit RN/MSN nursing bridge sequence. RN/MSN graduates will not be awarded the BSN degree.

4. Students admitted to MSN program, or post-graduate certificate programs must have and maintain while in the program:
  1. An unrestricted license to practice as a registered nurse in Tennessee or license to practice in an approved state in which clinical assignments are to be completed.
  2. Current CPR certification.
  3. Evidence of hepatitis B; measles, mumps, rubella (MMR); polio; tetanus, diphtheria, pertussis (Tdap) varicella, and COVID vaccinations and/or titers if available.
  4. Freedom from tuberculosis as evidenced by a negative PPD or health provider examination.
  5. Annual flu vaccination, unless medically contraindicated.
  6. Evidence of current professional malpractice insurance in the amount of \$1,000,000 per occurrence and \$6,000,000 in the aggregate.

## Progression and Retention Requirements

1. Students in the Loewenberg College of Nursing graduate program must comply with all retention standards of the University of Memphis Graduate School.
2. Students must earn a grade of "B" or better in all clinical and lab courses (NURS 7102 ; NURS 7107; NURS 7602 ; NURS 7604 ; NURS 7606 ; NURS 7609; NURS 7207 ; NURS 7209 ; NURS 7307 ; NURS 7309 ; NURS 7908 ; NURS 7909 ) in order to graduate.
3. Academic disqualification from the graduate nursing major will occur when the student:
  - fails to maintain a 3.0 GPA in graduate school.
  - fails to earn a grade of "B" (3.0) or better when repeating a course.
  - willfully misrepresents patient data or clinical practice.
  - willfully places any patient in physical or emotional jeopardy.
  - fails to maintain an active, unencumbered license to practice as a registered nurse in Tennessee or license to practice in an approved state in which clinical assignments are to be completed.
  - fails to disclose a felony conviction.
  - fails to disclose disciplinary action or diversion by any board of nursing (or equivalent).
  - fails to complete all degree requirements within five years of entering graduate nursing coursework.
4. All requirements for the MSN degree must be completed in 5 calendar years.

## Family Nurse Practitioner Concentration (48 credit hours)

The MSN with a concentration in Advanced Practice Nursing (Family Nurse Practitioner) prepares advanced practice nurses who deliver primary health care to all ages; individuals and families throughout the lifespan and across the health continuum. Among their course of study, students will be provided with knowledge and clinical skills necessary for health promotion, disease prevention, assessment, and management of common acute and chronic illnesses.

### Core Curriculum

- NURS 7001 - Health Care Policy \*\* Credit Hours: (3)
- NURS 7002 - Adv Nursing Research \*\* Credit Hours: (3)
- NURS 7990 - Scholarly Synthesis \*\* Credit Hours: (3)

### Family Nurse Practitioner Concentration Required Courses

- NURS 7000 - Theoretical Foundations \*\* Credit Hours: (3)
- NURS 7003 - Adv Role Development \*\* Credit Hours: (3)
- NURS 7101 - Advanced Health Assessment \*\* Credit Hours: (3)

- NURS 7102 - Advanced Health Assessment, Clinical \*\* Credit Hours: (1)
- NURS 7103 - Advanced Pathophysiology \*\* Credit Hours: (3)
- NURS 7104 - Advanced Pharmacology \*\* Credit Hours: (3)
- NURS 7107 - Differential Diagnosis Across the Lifespan Credit Hours: 2 (30 clock hours)
- NURS 7601 - Family Nurse Practnr I \*\* Credit Hours: (3)
- NURS 7602 - Family Nurs Prac I/Clin \*\* Credit Hours: (2) (120 clock hours)
- NURS 7603 - Family Nurs Practnr II \*\* Credit Hours: (3)
- NURS 7604 - Family Nurs Pract II/CLN \*\* Credit Hours: (4) (240 clock hours)
- NURS 7605 - Family Nurs Pract III \*\* Credit Hours: (3)
- NURS 7606 - Family Nurs Prac III Cln \*\* Credit Hours: (2) (120 clock hours)
- NURS 7609 - FNP Practicum \*\* Credit Hours: (4) (240 clock hours)

## Family Nurse Practitioner Concentration Progression and Retention Requirements

Family Nurse Practitioner students must complete a minimum of 750 clock hours to meet the academic and practicum requirements for national certification (*NTF Criteria, 2022*).

In accordance with the policy set forth by the University of Memphis Graduate School, before being recommended for graduation, every candidate for the master's degree and Post-Graduate Certificate, who does not write a thesis is required to pass a final comprehensive/competency examination.

### Family Nurse Practitioner Concentration Re-Entry after Disqualification

Following academic disqualification, students are eligible to reapply to the FNP program after 3 years or to the FNP Post-Graduate Certificate after 1 year. Minimum course requirements following readmission include the completion of FNP I, II, III, Residency and corequisite courses. All MSN progression, retention, and graduation policies apply.

## Nursing - Executive Leadership Concentration, (MSN)

### MSN Degree

### Admission

Because the University seeks to provide in as much as possible a reasonably safe environment for its health career students and their patients, students may be required during the course of the program to demonstrate their physical and/or emotional fitness to meet the essential requirements of the program. Such essential requirements include freedom from communicable diseases, the ability to perform certain physical tasks, and suitable emotional fitness. Any appraisal measures used to determine such physical and/or emotional fitness will be in compliance with Section 504 of the Rehabilitation Act of 1973 and the American with Disabilities Act of 1990, so as not to discriminate against any individual on the basis of disability.

Core performance standards for admission and progression:

1. Critical thinking ability sufficient for clinical judgment.
2. Interpersonal abilities sufficient to interact with individuals, families, and groups from a variety of social, emotional, cultural, and intellectual backgrounds.
3. Communication abilities sufficient for interaction with others in verbal and written form.
4. Physical abilities sufficient to move from room to room and maneuver in small spaces.
5. Gross and fine motor abilities sufficient to provide safe and effective nursing care.



6. Auditory ability sufficient to monitor and assess health needs.
7. Visual ability sufficient for observation and assessment necessary in nursing care.
8. Tactile ability sufficient for physical assessment.

## Admission Requirements

Admission to the program will be based on competitive selection from the pool of applicants. Multiple criteria will be used when considering applicant admission including, but not limited to, letter of interest, undergraduate and graduate grade point averages, professional experience, applicant interview, and letters of recommendation.

1. Admission Requirements for MSN Applicants:
  1. Admission to the University of Memphis Graduate School
  2. Admission to the Loewenberg College of Nursing graduate nursing program.
  3. An undergraduate minimum cumulative grade point average of 2.8 on a 4.0 scale.
  4. Letter of interest which discusses prior professional experience, future career goals, and reasons for pursuing graduate study.
  5. Letters of recommendation from three persons qualified and familiar to judge the applicant's academic and professional background and experience in nursing practice, specifying in detail the applicant's capabilities for graduate study and for future practice as an advanced practice nurse.
  6. Interview with LCON graduate faculty if requested by Admissions Committee.
  7. Submission of current professional resume
  8. Applicants for whom English is not their primary language are required to meet the University's minimum required TOEFL score: paper based 550 or greater; internet based 79; or 213 computer based.
  9. Eligibility to practice as a Registered Nurse in Tennessee or in an approved state in which the clinical assignments are completed. Appropriate licensure/authorization must be obtained during the first semester following admission to the program.
  10. Students transferring from another graduate nursing program must submit a letter of good standing and transcript from the dean/director of the previous nursing program.
  11. The standardized admission test is successful completion of the NCLEX licensing examination.
  12. Successful completion of 3 semester hour or 4 quarter hour undergraduate statistics course.
2. Admission Requirements for individuals with a BSN Degree
  1. Completion of BSN
  2. An unrestricted registered nursing license to practice in Tennessee or license to practice in an approved state in which clinical assignments are to be completed.
3. Admission Requirements for Registered Nurse Applicants with a BA/BS non-nursing major
  1. An unrestricted registered nursing license to practice in Tennessee or license to practice in an approved state in which clinical assignments are to be completed.
  2. Completion of a 9-unit RN/MSN nursing bridge sequence. RN/MSN graduates will not be awarded the BSN degree.
4. Students admitted to MSN program, or post-graduate certificate programs must have and maintain while in the program:
  1. An unrestricted license to practice as a registered nurse in Tennessee or license to practice in an approved state in which clinical assignments are to be completed.
  2. Current CPR certification.
  3. Evidence of hepatitis B; measles, mumps, rubella (MMR); polio; tetanus, diphtheria, pertussis (Tdap) varicella, and COVID vaccinations and/or titers if available.
  4. Freedom from tuberculosis as evidenced by a negative PPD or health provider examination.
  5. Annual flu vaccination, unless medically contraindicated.
  6. Evidence of current professional malpractice insurance in the amount of \$1,000,000 per occurrence and \$6,000,000 in the aggregate.

## Progression and Retention Requirements

1. Students in the Loewenberg College of Nursing graduate program must comply with all retention standards of the University of Memphis Graduate School.
2. Students must earn a grade of "B" or better in all clinical and lab courses (NURS 7102 ; NURS 7107; NURS 7602 ; NURS 7604 ; NURS 7606 ; NURS 7609; NURS 7207 ; NURS 7209 ; NURS 7307 ; NURS 7309 ; NURS 7908 ; NURS 7909 ) in order to graduate.
3. Academic disqualification from the graduate nursing major will occur when the student:
  - fails to maintain a 3.0 GPA in graduate school.
  - fails to earn a grade of "B" (3.0) or better when repeating a course.
  - willfully misrepresents patient data or clinical practice.
  - willfully places any patient in physical or emotional jeopardy.
  - fails to maintain an active, unencumbered license to practice as a registered nurse in Tennessee or license to practice in an approved state in which clinical assignments are to be completed.
  - fails to disclose a felony conviction.
  - fails to disclose disciplinary action or diversion by any board of nursing (or equivalent).
  - fails to complete all degree requirements within five years of entering graduate nursing coursework.
4. All requirements for the MSN degree must be completed in 5 calendar years.

## Executive Leadership - Executive MSN (37 credit hours)

The Executive MSN is a 37-credit hour program that prepares nurses for management and executive nursing positions in various health care setting systems. The Executive Leadership MSN program aligns with the American Organization of Nurse Executives and the ANCC Magnet Recognition Program® components.

### Core Curriculum

- NURS 7001 - Health Care Policy \*\* Credit Hours: (3)
- NURS 7002 - Adv Nursing Research \*\* Credit Hours: (3)
- NURS 7990 - Scholarly Synthesis \*\* Credit Hours: (3)

### Executive Leadership Concentration Required Courses

- NURS 7007 - Adv Role Dev for Nurse Execs \*\* Credit Hours: (3)
- NURS 7901 - Comm/Rel Bldg Nurse Exec \*\* Credit Hours: (3)
- NURS 7903 - Accountability, Advocacy, Ethics \*\* Credit Hours: (3)
- NURS 7303 - Health Care Finance \*\* Credit Hours: (3)
- NURS 7904 - Fin/Hum Rsrcs Patient Care \*\* Credit Hours: (3)
- NURS 7905 - Improving Patient Care Del \*\* Credit Hours: (3)
- NURS 7907 - Evidenc-Based Ldrshp Pract \*\* Credit Hours: (3)
- NURS 7908 - Healthcare Finance Practicum \*\* Credit Hours: (3)
- NURS 7909 - Nurse Executive Practicum \*\* Credit Hours: (4)

## Nursing - Nursing Education Concentration, (MSN)

### MSN Degree

### Admission

Because the University seeks to provide in as much as possible a reasonably safe environment for its health career students and their patients, students may be required during the course of the program to demonstrate their physical and/or emotional fitness to meet the essential requirements of the program. Such essential requirements include freedom from communicable diseases, the ability to perform certain physical tasks, and suitable emotional fitness. Any appraisal measures used to determine such physical and/or emotional fitness will be in compliance with Section 504 of the Rehabilitation Act of 1973 and the American with Disabilities Act of 1990, so as not to discriminate against any individual on the basis of disability.

Core performance standards for admission and progression:

1. Critical thinking ability sufficient for clinical judgment.
2. Interpersonal abilities sufficient to interact with individuals, families, and groups from a variety of social, emotional, cultural, and intellectual backgrounds.
3. Communication abilities sufficient for interaction with others in verbal and written form.
4. Physical abilities sufficient to move from room to room and maneuver in small spaces.
5. Gross and fine motor abilities sufficient to provide safe and effective nursing care.
6. Auditory ability sufficient to monitor and assess health needs.
7. Visual ability sufficient for observation and assessment necessary in nursing care.
8. Tactile ability sufficient for physical assessment.

## Admission Requirements

Admission to the program will be based on competitive selection from the pool of applicants. Multiple criteria will be used when considering applicant admission including, but not limited to, letter of interest, undergraduate and graduate grade point averages, professional experience, applicant interview, and letters of recommendation.

1. Admission Requirements for MSN Applicants:
  1. Admission to the University of Memphis Graduate School
  2. Admission to the Loewenberg College of Nursing graduate nursing program.
  3. An undergraduate minimum cumulative grade point average of 2.8 on a 4.0 scale.
  4. Letter of interest which discusses prior professional experience, future career goals, and reasons for pursuing graduate study.
  5. Letters of recommendation from three persons qualified and familiar to judge the applicant's academic and professional background and experience in nursing practice, specifying in detail the applicant's capabilities for graduate study and for future practice as an advanced practice nurse.
  6. Interview with LCON graduate faculty if requested by Admissions Committee.
  7. Submission of current professional resume
  8. Applicants for whom English is not their primary language are required to meet the University's minimum required TOEFL score: paper based 550 or greater; internet based 79; or 213 computer based.
  9. Eligibility to practice as a Registered Nurse in Tennessee or in an approved state in which the clinical assignments are completed. Appropriate licensure/authorization must be obtained during the first semester following admission to the program.
  10. Students transferring from another graduate nursing program must submit a letter of good standing and transcript from the dean/director of the previous nursing program.
  11. The standardized admission test is successful completion of the NCLEX licensing examination.
  12. Successful completion of 3 semester hour or 4 quarter hour undergraduate statistics course.
2. Admission Requirements for individuals with a BSN Degree
  1. Completion of BSN
  2. An unrestricted registered nursing license to practice in Tennessee or license to practice in an approved state in which clinical assignments are to be completed.
3. Admission Requirements for Registered Nurse Applicants with a BA/BS non-nursing major
  1. An unrestricted registered nursing license to practice in Tennessee or license to practice in an approved state in which clinical assignments are to be completed.
  2. Completion of a 9-unit RN/MSN nursing bridge sequence. RN/MSN graduates will not be awarded the BSN degree.

4. Students admitted to MSN program, or post-graduate certificate programs must have and maintain while in the program:
  1. An unrestricted license to practice as a registered nurse in Tennessee or license to practice in an approved state in which clinical assignments are to be completed.
  2. Current CPR certification.
  3. Evidence of hepatitis B; measles, mumps, rubella (MMR); polio; tetanus, diphtheria, pertussis (Tdap) varicella, and COVID vaccinations and/or titers if available.
  4. Freedom from tuberculosis as evidenced by a negative PPD or health provider examination.
  5. Annual flu vaccination, unless medically contraindicated.
  6. Evidence of current professional malpractice insurance in the amount of \$1,000,000 per occurrence and \$6,000,000 in the aggregate.

## Progression and Retention Requirements

1. Students in the Loewenberg College of Nursing graduate program must comply with all retention standards of the University of Memphis Graduate School.
2. Students must earn a grade of "B" or better in all clinical and lab courses (NURS 7102 ; NURS 7107; NURS 7602 ; NURS 7604 ; NURS 7606 ; NURS 7609; NURS 7207 ; NURS 7209 ; NURS 7307 ; NURS 7309 ; NURS 7908 ; NURS 7909 ) in order to graduate.
3. Academic disqualification from the graduate nursing major will occur when the student:
  - fails to maintain a 3.0 GPA in graduate school.
  - fails to earn a grade of "B" (3.0) or better when repeating a course.
  - willfully misrepresents patient data or clinical practice.
  - willfully places any patient in physical or emotional jeopardy.
  - fails to maintain an active, unencumbered license to practice as a registered nurse in Tennessee or license to practice in an approved state in which clinical assignments are to be completed.
  - fails to disclose a felony conviction.
  - fails to disclose disciplinary action or diversion by any board of nursing (or equivalent).
  - fails to complete all degree requirements within five years of entering graduate nursing coursework.
4. All requirements for the MSN degree must be completed in 5 calendar years.

## Nursing Education Concentration (31 credit hours)

The MSN with a concentration in Nursing Education prepares the student as a nurse educator to teach nursing across various health care system settings. In this course of study, students will learn about nursing and educational theories, learning strategies, curricular development, program planning and evaluation, and develop skills in different teaching methodologies.

### Core Curriculum

- NURS 7000 - Theoretical Foundations \*\* Credit Hours: (3)
- NURS 7001 - Health Care Policy \*\* Credit Hours: (3)
- NURS 7002 - Adv Nursing Research \*\* Credit Hours: (3)
- NURS 7003 - Adv Role Development \*\* Credit Hours: (3)
- NURS 7105 - Advanced Assessment, Pharmacology, and Pathophysiology for Nurse Educators Credit Hours: 3
- NURS 7106 - Advanced Assessment, Pharmacology, and Pathophysiology for Nurse Educators Lab Credit Hours: 1
- NURS 7990 - Scholarly Synthesis \*\* Credit Hours: (3)

## Nursing Education Concentration Required Courses:

- NURS 7204 - Curriculum Design & Ed Theory \*\* Credit Hours: (3)
- NURS 7205 - Evaluation Mthds in NursingEdu \*\* Credit Hours: (3)
- NURS 7207 - Nurse Educator Immersion 1 \*\* Credit Hours: (2)
- NURS 7209 - Nurse Educator Immersion 2 - Residency \*\* Credit Hours: (4)

## Nutrition - Clinical Nutrition Concentration, (MS)

### MS Degree Program

Program objectives are to: (1) recognize the diverse nature of subject matter embodied in the nutrition disciplines; (2) understand the research findings and theoretical constructs undergirding the nutrition disciplines (3) understand and embrace ethical standards of the respective disciplines.

### Admission Requirements and Program Prerequisites

1. Prospective students must apply through the Graduate School creating a login to fill out the application and submit transcripts, except Clinical Nutrition applicants must also follow the DICAS application process  
See <http://www.memphis.edu/healthsciences/graduate/index.php>. Graduate Record Examination (GRE) score submission is optional for Clinical Nutrition (CLIN), Environmental Nutrition (ENVN) and Nutrition Science (NSCI) programs.
2. An applicant, except for Clinical Nutrition, must upload the following in Slate:
  - Two letters of recommendation
  - A 300-500 word statement of goals including identification of the intended area of concentration.
3. Although exceptions may be considered, an applicant is normally expected to have graduated with a minimum baccalaureate GPA of 2.75, except Clinical Nutrition applicants must have a minimum GPA of 3.0.
4. Completion of an appropriate undergraduate major and a strong background in discipline-specific courses:
  - Clinical Nutrition: Completion of an undergraduate degree and an Academy of Nutrition and Dietetics (AND)-approved Didactic Program in Dietetics Verification Statement.
  - Environmental Nutrition: life science-oriented courses such as nutrition, biology, health sciences, public health, health promotion, food service, and anthropology
  - Nutrition Science: science-oriented courses such as, but not limited to, nutrition, biology, biochemistry, health sciences, and chemistry
5. Completion of undergraduate work deemed by the concentration committee as prerequisite to graduate courses.
6. Student admissions to the respective master's programs within the Nutrition (NUTR) major are differentially restricted to enable Graduate Faculty within each concentration to closely mentor their students. To ensure maximum consideration for admission into a specific NUTR concentration, the following dates are provided: May 1 for summer and fall and November 1 for the spring semester. Clinical Nutrition applicants must participate in the DICAS application process during mid-February. The admission committee may request a personal interview.

Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point average, GRE scores (Clinical Nutrition only), personal goals statement, relevant employment history, and letters of recommendation.

### Program Requirements

A minimum of 30 hours is required for the major although respective concentrations may require additional credit hours.

### Program Research Core (6 hours):

- HMSE 7010 - Research Methods in Health Sciences \*\* Credit Hours: (3)  
and
- EDPR 7541 - Stat Meth App Ed I \*\* Credit Hours: (3)  
or
- EDPR 7561 - Qualitative Mthds Educ \*\* Credit Hours: (3)  
or
- PUBH 7150 - Biostatistical Methods I \*\* Credit Hours: (3)

### Concentration requirements:

#### Clinical Nutrition (23 hours):

- HPRO 7780 - Health Counseling \*\* Credit Hours: (3)
- NUTR 7205 - Nutrition Care Acute/Chronic I Credit Hours: (3)
- NUTR 7305 - Nutrition Care Acute/ChronicII Credit Hours: (3)
- NUTR 7405 - Pharmacol Nutr Prof Credit Hours: (3)
- NUTR 7412 - Cellular Nutrition I\*\* Credit Hours: (3)
- NUTR 7422 - Cellular Nutrition II\*\* Credit Hours: (3)
- NUTR 6010 - Management and Food Systems Credit Hours: 3

### Guided electives selected with approval of the advisor:

Clinical Nutrition (0 hours)

### Culminating Experience (6-10 hours)

(Consult Graduate School Calendar for submission deadlines - [www.memphis.edu/gradschool/calendar.php](http://www.memphis.edu/gradschool/calendar.php)):

#### Clinical Nutrition:

- NUTR 7481 - Clin Intern NUTR Credit Hours: (6)  
and

### Other Requirements

1. Successful completion of an oral or written comprehensive examination (successful defense of the Clinical Internship in NUTR, Internship in Environmental Nutrition, Applied Project, or Thesis may serve this purpose). (Consult Graduate School Calendar for submission deadlines - [www.memphis.edu/gradschool/calendar.php](http://www.memphis.edu/gradschool/calendar.php))
2. Consult Graduate School Calendar for Intent to Graduate submission deadlines - [www.memphis.edu/gradschool/calendar.php](http://www.memphis.edu/gradschool/calendar.php)

## **Nutrition - Environmental Nutrition Concentration, (MS)**

## MS Degree Program

Program objectives are to: (1) recognize the diverse nature of subject matter embodied in the nutrition disciplines; (2) understand the research findings and theoretical constructs undergirding the nutrition disciplines (3) understand and embrace ethical standards of the respective disciplines.

## Admission Requirements and Program Prerequisites

1. Prospective students must apply through the Graduate School creating a login to fill out the application and submit transcripts, except Clinical Nutrition applicants must also follow the DICAS application process  
See <http://www.memphis.edu/healthsciences/graduate/index.php>. Graduate Record Examination (GRE) score submission is optional for Clinical Nutrition (CLIN), Environmental Nutrition (ENVN) and Nutrition Science (NSCI) programs.
2. An applicant, except for Clinical Nutrition, must upload the following in Slate:
  - Two letters of recommendation
  - A 300-500 word statement of goals including identification of the intended area of concentration.
3. Although exceptions may be considered, an applicant is normally expected to have graduated with a minimum baccalaureate GPA of 2.75, except Clinical Nutrition applicants must have a minimum GPA of 3.0.
4. Completion of an appropriate undergraduate major and a strong background in discipline-specific courses:
  - Clinical Nutrition: Completion of an undergraduate degree and an Academy of Nutrition and Dietetics (AND)-approved Didactic Program in Dietetics Verification Statement.
  - Environmental Nutrition: life science-oriented courses such as nutrition, biology, health sciences, public health, health promotion, food service, and anthropology
  - Nutrition Science: science-oriented courses such as, but not limited to, nutrition, biology, biochemistry, health sciences, and chemistry
5. Completion of undergraduate work deemed by the concentration committee as prerequisite to graduate courses.
6. Student admissions to the respective master's programs within the Nutrition (NUTR) major are differentially restricted to enable Graduate Faculty within each concentration to closely mentor their students. To ensure maximum consideration for admission into a specific NUTR concentration, the following dates are provided: May 1 for summer and fall and November 1 for the spring semester. Clinical Nutrition applicants must participate in the DICAS application process during mid-February. The admission committee may request a personal interview.

Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point average, GRE scores (Clinical Nutrition only), personal goals statement, relevant employment history, and letters of recommendation.

## Program Requirements

### Program Research Core (6 hours):

- HMSE 7010 - Research Methods in Health Sciences \*\* Credit Hours: (3)
- EDPR 7541 - Stat Meth App Ed I \*\* Credit Hours: (3)

### Concentration requirements:

#### Environmental Nutrition (21 hours):

- NUTR 7182 - Environmental Nutrition \*\* Credit Hours: (3)
- NUTR 7183 - Complementary NUTR \*\* Credit Hours: (3)

- NUTR 7710 - Humanitarian Nutrition \*\* Credit Hours: (3)
- NUTR 7712 - Cultural Nutrition and Foods \*\* Credit Hours: (3)
- NUTR 7720 - Food Policy \*\* Credit Hours: (3)
- NUTR 7722 - Sustainable Food System \*\* Credit Hours: (3)
- NUTR 7850 - Seminar in Environmental NUTR \*\* Credit Hours: (3)

Guided electives selected with approval of the advisor:

Environmental Nutrition (3 hours)

## Culminating Experience (3 hours)

(Consult Graduate School Calendar for submission deadlines - [www.memphis.edu/gradschool/calendar.php](http://www.memphis.edu/gradschool/calendar.php)):

Environmental Nutrition:

- NUTR 7800 - Internship in Environ NUTR \*\* Credit Hours: (3-6)  
OR
- NUTR 7950 - Applied Project in NUTR \*\* Credit Hours: (1-6)

## Other Requirements

1. Successful completion of an oral or written comprehensive examination (successful defense of the Clinical Internship in NUTR, Internship in Environmental Nutrition, Applied Project, or Thesis may serve this purpose). (Consult Graduate School Calendar for submission deadlines - [www.memphis.edu/gradschool/calendar.php](http://www.memphis.edu/gradschool/calendar.php))
2. Consult Graduate School Calendar for Intent to Graduate submission deadlines - [www.memphis.edu/gradschool/calendar.php](http://www.memphis.edu/gradschool/calendar.php)

## Nutrition - Nutrition Science Concentration, (MS)

### MS Degree Program

Program objectives are to: (1) recognize the diverse nature of subject matter embodied in the nutrition disciplines; (2) understand the research findings and theoretical constructs undergirding the nutrition disciplines (3) understand and embrace ethical standards of the respective disciplines.

### Admission Requirements and Program Prerequisites

1. Prospective students must apply through the Graduate School creating a login to fill out the application and submit transcripts, except Clinical Nutrition applicants must also follow the DICAS application process  
See <http://www.memphis.edu/healthsciences/graduate/index.php>. Graduate Record Examination (GRE) score submission is optional for Clinical Nutrition (CLIN), Environmental Nutrition (ENVN) and Nutrition Science (NSCI) programs.
2. An applicant, except for Clinical Nutrition, must upload the following in Slate:
  - Two letters of recommendation
  - A 300-500 word statement of goals including identification of the intended area of concentration.



3. Although exceptions may be considered, an applicant is normally expected to have graduated with a minimum baccalaureate GPA of 2.75, except Clinical Nutrition applicants must have a minimum GPA of 3.0.
4. Completion of an appropriate undergraduate major and a strong background in discipline-specific courses:
  - Clinical Nutrition: Completion of an undergraduate degree and an Academy of Nutrition and Dietetics (AND)-approved Didactic Program in Dietetics Verification Statement.
  - Environmental Nutrition: life science-oriented courses such as nutrition, biology, health sciences, public health, health promotion, food service, and anthropology
  - Nutrition Science: science-oriented courses such as, but not limited to, nutrition, biology, biochemistry, health sciences, and chemistry
5. Completion of undergraduate work deemed by the concentration committee as prerequisite to graduate courses.
6. Student admissions to the respective master's programs within the Nutrition (NUTR) major are differentially restricted to enable Graduate Faculty within each concentration to closely mentor their students. To ensure maximum consideration for admission into a specific NUTR concentration, the following dates are provided: May 1 for summer and fall and November 1 for the spring semester. Clinical Nutrition applicants must participate in the DICAS application process during mid-February. The admission committee may request a personal interview.

Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point average, GRE scores (Clinical Nutrition only), personal goals statement, relevant employment history, and letters of recommendation.

## Program Requirements

A minimum of 30 hours is required for the major although respective concentrations may require additional credit hours.

### Program Research Core (6 hours):

- HMSE 7010 - Research Methods in Health Sciences \*\* Credit Hours: (3)  
and
- EDPR 7541 - Stat Meth App Ed I \*\* Credit Hours: (3)  
or
- EDPR 7561 - Qualitative Mthds Educ \*\* Credit Hours: (3)  
or
- PUBH 7150 - Biostatistical Methods I \*\* Credit Hours: (3)

### Concentration requirements:

#### Nutrition Science (12 hours):

- NUTR 7152 - Problems in NUTR Credit Hours: (3)
- NUTR 7412 - Cellular Nutrition I\*\* Credit Hours: (3)
- NUTR 7422 - Cellular Nutrition II\*\* Credit Hours: (3)
- PUBH 7152 - Biostatistical Methods II \*\* Credit Hours: (3)

### Guided electives selected with approval of the advisor:

Nutrition Science (9 hours)

### Culminating Experience (6-10 hours)

(Consult Graduate School Calendar for submission deadlines - [www.memphis.edu/gradschool/calendar.php](http://www.memphis.edu/gradschool/calendar.php)):

## Nutrition Science:

- HMSE 7996 - Thesis **Credit Hours: (1-6)**  
or
- NUTR 7950 - Applied Project in NUTR \*\* **Credit Hours: (1-6)**
- or
- NUTR 7900 - Research Lab Residency **Credit Hours: 1-6**
- or
- Six credit hours of approved electives and a written comprehensive exam over required coursework

## Note:

Students choosing the thesis option should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

## Other Requirements

1. Successful completion of an oral or written comprehensive examination (successful defense of the Clinical Internship in NUTR, Internship in Environmental Nutrition, Applied Project, or Thesis may serve this purpose). (Consult Graduate School Calendar for submission deadlines - [www.memphis.edu/gradschool/calendar.php](http://www.memphis.edu/gradschool/calendar.php))
2. Consult Graduate School Calendar for Intent to Graduate submission deadlines - [www.memphis.edu/gradschool/calendar.php](http://www.memphis.edu/gradschool/calendar.php)

## Philosophy, (MA)

### MA Degree Program

Program objectives are: (1) development of expertise in the discipline to teach introductory courses; (2) ability to write a research paper on a philosophical topic for formal presentation; and (3) ability to demonstrate knowledge and skills for advanced study.

### Program Admission

The Philosophy Department admits students for the fall semester of each academic year. Information and application forms can be found on the department web site. Applications received after January 2nd cannot be guaranteed consideration for an assistantship for the upcoming academic year.

### Program Prerequisites

1. A bachelor's degree from a recognized college or university. Unofficial transcripts should be sent to the Office of Graduate Admissions.
2. A minimum of a 2.5 quality point average on a scale of 4.0. Students with less than a 2.5 quality point average may, on occasion, be admitted.
3. At least 18 semester hours in undergraduate philosophy courses including the following courses or their equivalent: introduction to philosophy, ethics, elementary logic, history of ancient philosophy, and history of modern philosophy.

Students who lack one or more of these courses may be admitted to the program only on the condition that they take the appropriate course as soon as possible.

4. Three letters of recommendation from people qualified to judge the student's ability to undertake graduate work.
5. A 10-20 page writing sample and a 1-2 page personal statement should be submitted.

## Program Requirements

1. Thirty to thirty-three hours of class work, 24 of which must be at the 7000 level or above. Students who write a thesis are required to take 30 hours, 3 of which are credit for the thesis. Students who do not write a thesis are required to take 33 hours. Students who elect to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write. Students with approved collateral areas may take up to six hours outside the department if they are writing a thesis or nine hours if they are not.
2. A written comprehensive examination covering the primary area of research interest of the student. This examination will incorporate an historical component relevant to the area of research interest.

## Physics - Computational Physics, Non-thesis, (MS)

### MS Degree Program

#### Program Admission Requirements

1. Prospective students, in addition to meeting the requirements for admission to The Graduate School, are required to present as a prerequisite for admission a satisfactory record of undergraduate work in physics. Normally 21 credit hours of physics course work will be required, including classical mechanics, electricity and magnetism, modern physics, quantum physics, and thermal physics, and 12 credit hours of calculus and differential equations. Students who are deficient in undergraduate work may be admitted on a conditional basis and would be allowed to take graduate courses only after fulfilling the undergraduate course deficiencies. Submission of general GRE score is strongly recommended for admission.

#### Program Requirements

#### After meeting the general degree requirements for admission to The Graduate School

After meeting the general degree requirements for admission to The Graduate School, students selecting Physics as a major will be assigned to the Department Graduate Committee, which must approve and direct their course of study.

#### Core requirements (9 credit hours)\*:

Must take three of the four courses listed below:

- PHYS 7100 - Classical Mechanics **Credit Hours: (3)**
- PHYS 7200 - Quantum Mechanics I **Credit Hours: (3)**
- PHYS 7300 - Electrodynamics **Credit Hours: (3)**
- PHYS 7520 - Statistical Mechanics **Credit Hours: (3)**
- Satisfactory completion of an oral comprehensive exam typically given during the final thesis oral presentation.

#### Computational Physics, non-thesis program (33 credit hours)

(Physics Program requirement\*: 9 credit hours, Concentration requirement: 6 credit hours, Additional courses: 18 credit hours)

Must take two of the three courses listed below:

- PHYS 7385 - Methods in Computational Physics **Credit Hours: (3)**
- PHYS 7386 - Methods of Theoretical Physics **Credit Hours: (3)**
- MATH 7721 - Adv Numerical Analysis **Credit Hours: (3)**

## Sufficient additional courses numbered 6000 and above

Sufficient additional courses numbered 6000 and above, including PHYS 7100/PHYS 8100 and PHYS 7300, to satisfy a minimum of 33 semester hours. These courses can be taken in a collateral field of study. CHEM 6415, COMP 7721, MATH 6391, MATH 6393, MATH 6721, MATH 7321, MATH 7393.

## Physics - Computational Physics, Thesis, (MS)

### MS Degree Program

#### Program Admission Requirements

1. Prospective students, in addition to meeting the requirements for admission to The Graduate School, are required to present as a prerequisite for admission a satisfactory record of undergraduate work in physics. Normally 21 credit hours of physics course work will be required, including classical mechanics, electricity and magnetism, modern physics, quantum physics, and thermal physics, and 12 credit hours of calculus and differential equations. Students who are deficient in undergraduate work may be admitted on a conditional basis and would be allowed to take graduate courses only after fulfilling the undergraduate course deficiencies. Submission of general GRE score is strongly recommended for admission.

#### Program Requirements

#### After meeting the general degree requirements for admission to The Graduate School

After meeting the general degree requirements for admission to The Graduate School, students selecting Physics as a major will be assigned to the Department Graduate Committee, which must approve and direct their course of study.

#### Core requirements (9 credit hours)\*:

Must take three of the four courses listed below:

- PHYS 7100 - Classical Mechanics **Credit Hours: (3)**
- PHYS 7200 - Quantum Mechanics I **Credit Hours: (3)**
- PHYS 7300 - Electrodynamics **Credit Hours: (3)**
- PHYS 7520 - Statistical Mechanics **Credit Hours: (3)**
- Satisfactory completion of an oral comprehensive exam typically given during the final thesis oral presentation.

#### Computational Physics, thesis program (30 credit hours)

(Physics Program core requirement\*: 9 credit hours, Concentration requirement: 6 credit hours, Thesis: 6 credit hours, Additional courses: 9 credit hours)

- PHYS 7385 - Methods in Computational Physics **Credit Hours: (3)**
- PHYS 7386 - Methods of Theoretical Physics **Credit Hours: (3)**
- MATH 7721 - Adv Numerical Analysis **Credit Hours: (3)**

The student must also complete:

- PHYS 7996 - Thesis **Credit Hours: (1-6)** must contain a strong computational physics component. Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write.

## The student must present

The student must present a research proposal to the graduate thesis committee at the end of the first semester of his/her study for the thesis approval.

## Additional courses to be taken from the following list:

These courses must be approved by the graduate advisor.

- MATH 6391 - Partial Diffrentl Equation I **Credit Hours: (3)**
- MATH 7321 - Modeling & Computation **Credit Hours: (3)**
- MATH 7393 - Differl Equatns/App **Credit Hours: (3)**

## Physics - General Physics Concentration, Non-Thesis option, (MS)

### MS Degree Program

### Program Admission Requirements

1. Prospective students, in addition to meeting the requirements for admission to The Graduate School, are required to present as a prerequisite for admission a satisfactory record of undergraduate work in physics. Normally 21 credit hours of physics course work will be required, including classical mechanics, electricity and magnetism, modern physics, quantum physics, and thermal physics, and 12 credit hours of calculus and differential equations. Students who are deficient in undergraduate work may be admitted on a conditional basis and would be allowed to take graduate courses only after fulfilling the undergraduate course deficiencies. Submission of general GRE score is strongly recommended for admission.

### Program Requirements

#### After meeting the general degree requirements for admission to The Graduate School

After meeting the general degree requirements for admission to The Graduate School, students selecting Physics as a major will be assigned to the Department Graduate Committee, which must approve and direct their course of study.

#### Core requirements (9 credit hours)\*:

Must take three of the four courses listed below:

- PHYS 7100 - Classical Mechanics **Credit Hours: (3)**
- PHYS 7200 - Quantum Mechanics I **Credit Hours: (3)**
- PHYS 7300 - Electrodynamics **Credit Hours: (3)**
- PHYS 7520 - Statistical Mechanics **Credit Hours: (3)**
- Satisfactory completion of an oral comprehensive exam typically given during the final thesis oral presentation.

## General Physics Concentration, non-thesis option (33 credit hours)

(Physics Program core requirement\*: 9 credit hours, Concentration requirement: 6 credit hours, Additional courses: 18 credit hours)

### General Physics Concentration requirement (6 credit hours):

Must take two courses from the following list:

- PHYS 6021 - Applied Radiation Physics **Credit Hours: (3)**
- PHYS 6040 - Medical Physics **Credit Hours: (3)**
- PHYS 6050 - Astrophysics I **Credit Hours: (3)**
- PHYS 6051 - Astrophysics II **Credit Hours: (3)**
- PHYS 6110 - Nuclear and Particle Physics **Credit Hours: (3)**
- PHYS 6222 - Environmental Physics **Credit Hours: (3)**
- PHYS 6230 - Electronics **Credit Hours: (4)**

## Sufficient additional courses to satisfy a minimum of 33 semester hours

Sufficient additional courses to satisfy a minimum of 33 semester hours, in which 9 may be in a collateral field of study. These courses must be approved by the graduate advisor. 23 semester hours must be taken in courses numbered 7000 or above.

## Complete a survey of

Complete a survey of an area of current research in fundamental or applied physics and make an oral and written presentation based on this survey before a faculty committee. The subject of this survey must be approved by the departmental graduate committee at least one semester prior to graduation.

## Physics - General Physics Concentration, Thesis Option, (MS)

### MS Degree Program

#### Program Admission Requirements

1. Prospective students, in addition to meeting the requirements for admission to The Graduate School, are required to present as a prerequisite for admission a satisfactory record of undergraduate work in physics. Normally 21 credit hours of physics course work will be required, including classical mechanics, electricity and magnetism, modern physics, quantum physics, and thermal physics, and 12 credit hours of calculus and differential equations. Students who are

deficient in undergraduate work may be admitted on a conditional basis and would be allowed to take graduate courses only after fulfilling the undergraduate course deficiencies. Submission of general GRE score is strongly recommended for admission.

## Program Requirements

### After meeting the general degree requirements for admission to The Graduate School

After meeting the general degree requirements for admission to The Graduate School, students selecting Physics as a major will be assigned to the Department Graduate Committee, which must approve and direct their course of study.

### Core requirements (9 credit hours)\*:

Must take three of the four courses listed below:

- PHYS 7100 - Classical Mechanics **Credit Hours: (3)**
- PHYS 7200 - Quantum Mechanics I **Credit Hours: (3)**
- PHYS 7300 - Electrodynamics **Credit Hours: (3)**
- PHYS 7520 - Statistical Mechanics **Credit Hours: (3)**
- Satisfactory completion of an oral comprehensive exam typically given during the final thesis oral presentation.

### General Physics Concentration, thesis option (30 credit hours)

(Physics Program core requirement\*: 9 credit hours, Concentration requirement: 6 credit hours, Thesis: 6 credit hours, Additional courses: 9 credit hours)

### General Physics Concentration requirement:

Must take two courses from the following list:

- PHYS 6021 - Applied Radiation Physics **Credit Hours: (3)**
- PHYS 6040 - Medical Physics **Credit Hours: (3)**
- PHYS 6050 - Astrophysics I **Credit Hours: (3)**
- PHYS 6051 - Astrophysics II **Credit Hours: (3)**
- PHYS 6110 - Nuclear and Particle Physics **Credit Hours: (3)**
- PHYS 6222 - Environmental Physics **Credit Hours: (3)**
- PHYS 6230 - Electronics **Credit Hours: (4)**

### Sufficient additional courses

Sufficient additional courses, including 6 semester hours in PHYS 7996, Thesis, to satisfy a minimum of 30 semester hours (9 semester hours may be in a collateral field of study with course numbers 6000 or above). These courses must be approved by the graduate advisor. 21 semester hours must be taken in courses numbered 7000 or above.

- PHYS 7996 - Thesis **Credit Hours: (1-6)**

### The student must present

The student must present a research proposal to the graduate thesis committee at the end of the first semester of his/her study for the thesis approval.

## The student must complete

The student must complete a research project, submit a written thesis describing the research, orally present and defend the thesis before a faculty committee. Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write.

## Physics - Materials Science Concentration, Non-Thesis, (MS)

### MS Degree Program

#### Program Admission Requirements

1. Prospective students, in addition to meeting the requirements for admission to The Graduate School, are required to present as a prerequisite for admission a satisfactory record of undergraduate work in physics. Normally 21 credit hours of physics course work will be required, including classical mechanics, electricity and magnetism, modern physics, quantum physics, and thermal physics, and 12 credit hours of calculus and differential equations. Students who are deficient in undergraduate work may be admitted on a conditional basis and would be allowed to take graduate courses only after fulfilling the undergraduate course deficiencies. Submission of general GRE score is strongly recommended for admission.

#### Program Requirements

#### After meeting the general degree requirements for admission to The Graduate School

After meeting the general degree requirements for admission to The Graduate School, students selecting Physics as a major will be assigned to the Department Graduate Committee, which must approve and direct their course of study.

#### Core requirements (9 credit hours)\*:

Must take three of the four courses listed below:

- PHYS 7100 - Classical Mechanics **Credit Hours: (3)**
- PHYS 7200 - Quantum Mechanics I **Credit Hours: (3)**
- PHYS 7300 - Electrodynamics **Credit Hours: (3)**
- PHYS 7520 - Statistical Mechanics **Credit Hours: (3)**
- Satisfactory completion of an oral comprehensive exam typically given during the final thesis oral presentation.

#### Materials Science Concentration, non-thesis program (33 credit hours)

(Physics Program requirement\*: 9 credit hours, Concentration requirement: 6 credit hours, Additional courses: 18 credit hours)

#### Materials Science Concentration requirement:



Must take two of the following courses:

- PHYS 6020 - Soft Matter and Biological Physics **Credit Hours: (3)**
- PHYS 6610 - Solid State Physics **Credit Hours: (3)**
- PHYS 6720 - Materials Physics **Credit Hours: (3)**
- PHYS 7390 - Polymer Physics **Credit Hours: (3)**
- MECH 7361 - Mech Bhvr Of Materials **Credit Hours: (3)**

## Sufficient additional courses

Sufficient additional courses (18 credit hours in collateral field of study with course numbers 6000 or above), to satisfy a minimum of 33 semester hours. These courses must be approved by the graduate advisor.

## Complete

Complete a survey of an area of current research in fundamental or applied materials physics and make an oral and written presentation based on this survey before a faculty committee. The subject of this survey must be approved by the departmental graduate committee at least one semester prior to graduation.

## Physics - Materials Science Concentration, Thesis, (MS)

### MS Degree Program

### Program Admission Requirements

1. Prospective students, in addition to meeting the requirements for admission to The Graduate School, are required to present as a prerequisite for admission a satisfactory record of undergraduate work in physics. Normally 21 credit hours of physics course work will be required, including classical mechanics, electricity and magnetism, modern physics, quantum physics, and thermal physics, and 12 credit hours of calculus and differential equations. Students who are deficient in undergraduate work may be admitted on a conditional basis and would be allowed to take graduate courses only after fulfilling the undergraduate course deficiencies. Submission of general GRE score is strongly recommended for admission.

### Program Requirements

#### After meeting the general degree requirements for admission to The Graduate School

After meeting the general degree requirements for admission to The Graduate School, students selecting Physics as a major will be assigned to the Department Graduate Committee, which must approve and direct their course of study.

#### Core requirements (9 credit hours)\*:

Must take three of the four courses listed below:

- PHYS 7100 - Classical Mechanics **Credit Hours: (3)**
- PHYS 7200 - Quantum Mechanics I **Credit Hours: (3)**
- PHYS 7300 - Electrodynamics **Credit Hours: (3)**

- **PHYS 7520 - Statistical Mechanics Credit Hours: (3)**
- Satisfactory completion of an oral comprehensive exam typically given during the final thesis oral presentation.

## Materials Science Concentration, thesis program (30 credit hours)

(Physics Program requirement\*: 9 credit hours, Concentration requirement: 6 credit hours, Thesis: 6 credit hours, Additional courses: 9 credit hours)

### Materials Science Concentration requirement:

Must take two of the following courses:

- **PHYS 6020 - Soft Matter and Biological Physics Credit Hours: (3)**
- **PHYS 6610 - Solid State Physics Credit Hours: (3)**
- **PHYS 6720 - Materials Physics Credit Hours: (3)**
- **PHYS 7390 - Polymer Physics Credit Hours: (3)**
- **MECH 7361 - Mech Bhvr Of Materials Credit Hours: (3)**

### Sufficient additional courses

Sufficient additional courses (in a collateral field of study with course numbers 6000 or above), including 6 semester hours in PHYS 7996, Thesis, to satisfy a minimum of 30 semester hours. These courses must be approved by the graduate advisor.

- **PHYS 7996 - Thesis Credit Hours: (1-6)**

### The student must present

The student must present a research proposal to the graduate thesis committee at the end of the first semester of his/her study for the thesis approval.

### The student must complete

The student must complete a research project, submit a written thesis describing the research, orally present and defend the thesis before a faculty committee. Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write.

## Political Science, (MA)

### MA Degree Program

#### Program Admission

1. Admission to the program will be based on selections from a pool of applicants who meet the University's Graduate School admission requirements.
2. Significant weight is given to the following factors in determining admissions to the MA program:
  1. An undergraduate grade point average of 3.0 on a 4.0 scale from an accredited college or university.

2. GRE or LSAT scores.
3. Letters of recommendation from two persons (at least one academic) familiar with the applicant's academic background or experience, specifying in detail the applicant's capabilities for graduate study.
4. A statement of approximately 1000 words indicating the applicant's present interests and career goals, including why the applicant wants the MA degree.

## Program Requirements

1. Students who write a thesis must complete 33 hours of graduate courses, including 3-6 hours of credit for POLS 7996, Thesis. Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write. Students who do not write a thesis must complete 36 hours of graduate courses.
2. All students must complete POLS 7100, Seminar in Scope and Methods of Political Science Research, and POLS 7401 - Sem Political Theory, and POLS 7101 - Political Statistics, with grades of B or better in each course.
3. At least 27 semester hours of the courses (30 hours for the non-thesis option) must be taken at the 7000 level, at least 21 (24 for the non-thesis option) of which must be in Political Science.
4. No more than 6 semester hours of internship courses may be counted toward the 33 or 36 semester hour requirement. Without the approval of the graduate coordinator and chair, no more than 6 semester hours outside the department of Political Science may be counted toward the 33 or 36 semester-hour requirement.
5. Non-thesis students must pass a comprehensive examination and thesis students must pass an oral defense of their thesis. The oral defense of the thesis constitutes a comprehensive examination over all course-work.
6. Comprehensive examinations will consist of four questions total. Students will answer two exam questions from any two of the following fields: American Politics, Public Law, Comparative Politics, International Relations, Political Theory, Public Policy or a combination of International Relations and Comparative Politics. A student should take a minimum of nine hours in each of the two examination fields.
  1. With the approval of the academic coordinator and the chair, a student may substitute 9 hours in a collateral field for one of the two examination fields.
  2. The examination committee will consist of a chair and two other faculty, chosen by the student in consultation with the academic coordinator and the chair of the examining committee.
  3. Each of the two written exams will be graded by at least two faculty readers, at least one of whom is a member of the examination committee.
  4. Students receive a grade of "low pass," "pass," "high pass," or "fail," on each of the two exams. If a student receives a grade of "high pass" on both of the exams, the oral examination is waived. Otherwise, the student will, upon passing the two written exams, submit to an oral exam with the committee, to cover both examination areas.
  5. Students who fail either of the written exams will not submit to an oral exam with the committee that semester. The student will be required to re-take the failed written exam(s) the following semester and then submit to an oral examination upon passage of said exams.
  6. Should students earn a low pass on any portion of the written exam(s) and then fail to compensate for the written weaknesses during their oral examination, the members of the examination committee will allow the students one week to successfully rewrite the examination answers in question. If the student fails to sufficiently improve their answers, they must retake the exams the following semester.

## Professional Studies, (MPS)

### MPS Degree Program

#### Program Admission and Prerequisites

Applicants to the program are evaluated as they apply and may be admitted for the fall, spring or summer sessions. All applicants must meet the following admission requirements:

1. Completion of an undergraduate degree with a grade point average of at least 2.75 on a 4.0 scale from an accredited college or university.
2. Applicants with substantial professional work experience may submit a portfolio in lieu of the GRE. The portfolio is to include: a resume; a 500 to 600 word essay detailing motivation for entering the MPS program and how the program will help the applicant achieve personal and professional goals; and two sealed letters of professional reference. Applicants may also include a detailed description of professional responsibilities, professional achievements, and professional awards/recognitions, if applicable.

## Program Requirements

### Completion of MPS program core:

- PRST 7100 - Prof Environ/Issue/Ethic \*\* Credit Hours: (3)
- PRST 7200 - Globalization/Profnsns \*\* Credit Hours: (3)
- PRST 7300 - Research Methods \*\* Credit Hours: (3)
- PRST 7998 - Professional Project \*\* Credit Hours: (3)
- An oral comprehensive examination

### Completion of 21 semester hours of concentration courses (and electives where applicable)

#### For the Strategic Leadership Concentration

Complete at least one course from each of five subject areas and two additional classes from any of the subject areas:

#### Leadership Theory:

- PRST 7500 - Foundation/Leadership \*\* Credit Hours: (3)
- LDPS 7000 - Current Issue/Leadershp Credit Hours:
- ELPA 7560 - Small Group Leadership \*\* Credit Hours: (3)

#### Research/Data Analysis:

- PRST 7770 - Comp Based Decsn Model \*\* Credit Hours: (3)
- PRST 7600 - Statistical Analysis \*\* Credit Hours: (3)

#### Organizational Structure and Change:

- PRST 7310 - Leadership/Organization \*\* Credit Hours: (3)
- PRST 7800 - Organizational Change Skills \*\* Credit Hours: (3)

#### Communication:

- COMM 7110 - Leadership/Communicatn Credit Hours: (3)
- PRST 7700 - Conflict Mgmt/Negotiatn \*\* Credit Hours: (3)

Strategic Planning and Assessment:

- PRST 7105 - Project Planning & Scheduling \*\* Credit Hours: (3)
- PRST 7040 - Human Resources Mgmt \*\* Credit Hours: (3)

For the Human Resources Leadership concentration

Complete all four of the Concentration Courses, plus three additional courses as noted below:

Concentration Courses:

- PRST 7040 - Human Resources Mgmt \*\* Credit Hours: (3)
- PRST 7600 - Statistical Analysis \*\* Credit Hours: (3)
- PRST 7910 - Employment & HR Law \*\* Credit Hours: (3)
- PRST 7920 - Diversity in the Workplace \*\* Credit Hours: (3)

Choose one:

- PRST 7500 - Foundation/Leadership \*\* Credit Hours: (3)
- PRST 7310 - Leadership/Organization \*\* Credit Hours: (3)

Choose two:

- PRST 7700 - Conflict Mgmt/Negotiatn \*\* Credit Hours: (3)
- PRST 7930 - Compensation and Benefits \*\* Credit Hours: (3)
- PRST 7940 - Recruitment, Selection, Retentio \*\* Credit Hours: (3)
- PRST 7400 - Instr Dsgn Train/Develpmt \*\* Credit Hours: (3)

For the Training and Development Concentration

Complete five (5) of the concentration courses and two of the specialization courses as noted below:

Concentration Courses (five courses):

- PRST 7410 - Evaluation of Learning \*\* Credit Hours: (3)
- PRST 7420 - Org Needs Assessment \*\* Credit Hours: (3)
- PRST 7400 - Instr Dsgn Train/Develpmt \*\* Credit Hours: (3)
- PRST 7770 - Comp Based Decsn Model \*\* Credit Hours: (3)
- PRST 7600 - Statistical Analysis \*\* Credit Hours: (3)

Specialization Courses (two courses required):

- PRST 7105 - Project Planning & Scheduling \*\* Credit Hours: (3)
- PRST 7440 - Engage the Adult Online Learnr \*\* Credit Hours: (3)
- PRST 7450 - Computer-Based Instruction \*\* Credit Hours: (3)
- PRST 7430 - Adv Instr Desgn/Train&Devel \*\* Credit Hours: (3)

- PRST 7040 - Human Resources Mgmt \*\* Credit Hours: (3)
- PRST 7910 - Employment & HR Law \*\* Credit Hours: (3)
- PRST 7920 - Diversity in the Workplace \*\* Credit Hours: (3)

Successful completion of

- PRST 7998 - Professional Project \*\* Credit Hours: (3)  
OR an appropriate online elective for their concentration

## Public Administration, (MPA)

### Master of Public Administration (MPA)

**Master of Public Administration (MPA) Degree Program** has concentrations in nonprofit administration and public policy/management.

### Program Admission

Applicants must satisfy admission requirements of the Graduate School and receive favorable endorsement from the public administration faculty. Admission will be based on:

1. Applicable test scores (Graduate Record Examination [GRE], Graduate Management Aptitude Test [GMAT], or Miller Analogy Test [MAT]);
2. Undergraduate grade point average; Applicants for the MPA degree may be eligible for a waiver of the standardized entrance exam (GRE, GMAT or MAT). To learn more about the waiver policy please go to: [www.memphis.edu/padm/mpa/standardized-waiver](http://www.memphis.edu/padm/mpa/standardized-waiver).
3. Previous education and/or experience demonstrated via a résumé and two letters of reference;
4. Ability to articulate career goals and education objectives via a personal statement.

Inquiries can be directed to [mpa\\_admissions@memphis.edu](mailto:mpa_admissions@memphis.edu)

### Program Requirements

1. Students are required to complete a minimum of thirty-nine (39) semester hours. Twenty-one (21) hours are taken in the core curriculum; fifteen (15) hours are required in each concentration, plus a three (3) hour internship. An individual course plan is designed for each student and approved by the Coordinator of Graduate Studies. The two concentrations allow students to extend the basic knowledge gained in the core curriculum to more focused public service fields, including nonprofit administration and public policy and management.

The core curriculum is as follows:

- PADM 7661 - Contemp Persp PA Credit Hours: (3)
- PADM 7663 - Issue Public Mgmt Polcy \*\* Credit Hours: (3)
- PADM 7601 - Research Methods Credit Hours: (3)
- PADM 7602 - Public Bdgt Adm/Fin \*\* Credit Hours: (3)
- PADM 7605 - Human Resources Admin \*\* Credit Hours: (3)
- PADM 7607 - Public Mgmt Leadership Credit Hours: (3)

- PADM 7612 - Program/Policy Evaltn **Credit Hours: (3)**  
or
- PADM 7213 - Sem Publ Pol Analysis **Credit Hours: (3)**

## Other Requirements

1. The capstone project must be successfully completed during the calendar year in which the student expects to graduate. Students must also successfully complete PADM 7607 - Public Mgmt Leadership, during the calendar year in which the student expects to graduate.

## Concentration Requirements

1. Based on their course plan, students must complete five graduate courses (15 hours) specific to their academic goals and the guidelines of the concentration.
2. Public Service Field Experience: Students with no administrative experience must enroll in PADM 7610 - Internship Public Admin (3 Hours). The internship placement should relate to the student's concentration and career goals. Students must complete a minimum of 18 semester hours prior to enrollment in PADM 7610.

## Non-Degree-Seeking Students

If a student has taken graduate courses at The University of Memphis as a non-degree-seeking student, the student may apply a maximum of 9 credit hours toward his/her degree requirements. The grade in each course applied must be at least a "3.00." The Coordinator of Graduate Studies must approve all course work taken as a non-degree-seeking student.

## Romance Languages, (MA)

### MA Degree Program

A student entering the program will be assigned a major advisor, usually the respective graduate coordinator for French or Spanish. This advisor is to be consulted in all matters concerning the student's program of study. It is the student's responsibility to familiarize himself/herself with the detailed online description of the program concerning requirements, policies, and procedures including--but not limited to--the reading list, coursework requirements, course descriptions, comprehensive examination procedures, reading knowledge of a second language, independent studies, language proficiency, grade point average requirements, time limitation, academic misconduct policies, and other issues. It is also the student's responsibility to consult with his/her respective graduate coordinator and/or the chair for further clarification.

Teaching Assistantships carry a stipend and cover the cost of tuition for the entire program. The Department also offers Research Assistantships which carry a stipend and half-tuition scholarship per academic semester. Both awards are offered on a competitive basis. Part-time students or students who have a full-time job or any other activities that may interfere with their academic responsibilities **are not eligible**. Students interested in obtaining a teaching or research assistantship should declare their interest and submit a **letter of intent**, addressed to the Graduate Advisor in French or Spanish, as part of the application process. Applications for an assistantship will only be evaluated once the applicant has been admitted to the graduate program. Applicants are encouraged to visit the department web site at <http://www.memphis.edu/wll/programs/> for a detailed description of the program and information about the stipend amount for teaching and research assistantships.

### Program Prerequisites

1. The applicant must provide an official transcript showing that a bachelor's degree was awarded by an accredited college or university. Official transcripts should be sent to the Office of Graduate Admissions.

2. A minimum of a 3.0 quality point average on a scale of 4.0 is highly desirable. Students with less than a 3.0 quality point average may be admitted with the approval of the Department Chair and the Coordinator of Graduate Studies.
3. A minimum of 24 upper-division semester hours or the equivalent in French or Spanish. Examples of an equivalent preparation in French or Spanish include having native or near-native proficiency, university studies in a French/Spanish-speaking country, etc.
4. A reasonable proficiency in the language of concentration, to be determined by the Department prior to admission. An oral interview in French or Spanish is required. The applicant must contact the respective coordinator in French or Spanish early in the admission process to make arrangements for the interview.
5. A writing sample in French or Spanish depending on the concentration chosen must be submitted to the respective coordinator of French or Spanish. This documentation is intended to demonstrate the student's adequate command of writing skills in his/her field of concentration.
6. A letter of intent explaining the applicant's motivation and objectives in pursuing a graduate degree in French or Spanish.
7. Two letters of recommendation, one of which must be from a former teacher/professor in the language of studies (French or Spanish)
8. A 3.0 GPA for upper-division courses in the field. A GPA below 3.0 requires the approval of the Department Chair and the Coordinator of Graduate Studies.
9. International students, i.e. applicants whose highest degree is from a foreign university, must have their credentials evaluated. The university will accept evaluations done by any credentialing agency listed on the National Association of Credential Evaluation Services web site <http://www.naces.org>. The **course-by course report is required**. International students must therefore:
  1. score a minimum of **94** on the web-based TOEFL and a minimum of 26 on the speaking portion of the same exam.
  2. convert their educational credentials—grades and diploma—into their US equivalents with an appropriate agency listed on the National Association of Credential Evaluation services;
  3. Ask the same agency to submit the official transcript and diploma along with their respective conversion and translation to Graduate Admissions, University of Memphis.

## Program Requirements

1. A total of thirty-three (33) semester hours.
2. The possibility of collateral hours — i. e. coursework in another discipline or department which is related to the field of concentration—are handled differently in French and Spanish. Students interested in taking collateral hours will need to consult with the respective coordinator in French and Spanish to see if these hours are available in their concentration and if they are eligible. At least 23 hours must be taken in 7000-level courses (eight [8] courses in all).
3. Satisfactory completion of minimum standards for eligibility to take the comprehensive exams. Students in the program must seek advice from the respective coordinator in French and Spanish to determine that the coursework they carry fulfills these minimum standards.
4. A reading knowledge of a foreign language other than that of the concentration. This may be demonstrated in the following ways:
  1. achieving a grade of B ("3.0") or better in a fourth-semester language course (e.g. FREN/GERM/ITAL/SPAN 2020),
  2. achieving a grade of B ("3.0") or better in a graduate reading course (FREN 7000 and GERM 7000 are the only two courses available for this option. They are usually offered in the summer)
  3. achieving a grade of B ("3.0") or better in upper-division courses at the 3000- or 4000-levels (e.g. FREN 3302/GERM 3790/ITAL 3311/PORT 3301/SPAN 3303),
  4. achieving a grade of B ("3.0") or better in graduate courses taught in the target language at the 6000- or 7000 levels (e.g. FREN 6302/PORT 6024/SPAN 6307,
  5. students who provide evidence of knowledge of a foreign language other than that of the concentration equivalent to a fourth-semester language course or superior may arrange with the section head of the specific language for a written test to prove competency.



5. A comprehensive written and oral examination after completion of 33 hours and fulfillment of the reading knowledge requirement. These examinations will be conducted in the language of the concentration. For a full description of the comprehensive examination procedures, please visit the department website at <http://www.memphis.edu/wll>

## School Psychology, (MA)

### MA and EdS Degree

This program is offered collaboratively with the College of Education and coursework from both areas is required. Students entering the program must complete both the MA and the EdS degrees, including an internship of one school year, in order to obtain an endorsement for licensure. The EdS degree is an advanced sequence in the specialty and is to be pursued only by persons who have completed the MA degree or comparable degree with a concentration in school psychology, or who already hold school psychology credentials. The program is accredited by the Council for the Accreditation of Educator Preparation (CAEP), and holds full approval from the National Association of School Psychologists (NASP)/CAEP. It is also formally approved by the Tennessee State Department of Education and leads to that agency's license in school psychology.

The overall goal of the MA/EdS program is that students will successfully complete the content domain-related requirements of the program, obtain credentialing for school-based practice from the Tennessee State Board of Education or comparable authority in other states, and become Nationally Certified School Psychologists (NCSP).

Program objectives are: (1) understanding of the nature of educational settings and ability to work cooperatively and effectively with parents, school personnel, and other professionals; (2) broad expertise in assessment and intervention at the individual, group, and system level; and (3) development of research and evaluation skills, including data analysis and oral and written communication of research.

### Program Admission and Prerequisites

Enrollment in the program is limited. All application information must have been received by June 15 for an applicant to be considered for admission to the MA and EdS program in School Psychology. Applications will be reviewed as they are completed and applicants are encouraged to complete the application well in advance of the deadline. The following items are required for consideration for admission:

1. A completed application form accessed at: Graduate Admissions.
2. An official transcript of *all* undergraduate and graduate coursework must be sent..
3. GRE scores are not required and should not be submitted..
4. Letters of recommendation from at least three persons (professional educators, psychologists, and/or employers) familiar with the applicant's academic background, aptitude for graduate work in school psychology, and interest in working with school-age children in school settings.
5. Undergraduate preparation in Psychology and/or Education. It is strongly recommended that applicants have at least 18 undergraduate hours in Psychology and/or Education, with preparation in the psychology of learning, psychological appraisal/measurement, human growth and development, and foundations of education.
6. The program is pursued on a full-time basis and students enroll for 12 hours each semester. Enrolling for fewer hours is done with the permission of the program director.
7. Further information about applying may be found at: <https://www.memphis.edu/psychology/graduate/apply.php>.

### Program Requirements—MA Degree (30 hours)

#### Psychology courses (21 hours):

- PSYC 7800 - Intro School Psychology **Credit Hours: (3)**

- PSYC 7207 - Developmental Psyc Credit Hours: (3)
- PSYC 7803 - Psych Ed Assessmnt I Credit Hours: (3)
- PSYC 7804 - Psych Ed Assessmnt II Credit Hours: (3)
- PSYC 7805 - Psych Consultation Credit Hours: (3)
- PSYC 7806 - Sch Psych Interventions Credit Hours: (3)
- PSYC 7807 - Academic Interventions Credit Hours: (3)

### Education courses (15 hours):

- EDPR 7511 - Intro Ed and Psych Measurement \*\* Credit Hours: 3
- LEAD 6000 - Educ/Schl/Am Society Credit Hours: (3)
- SPED 7000 - Intro Excpntional Learnr \*\* Credit Hours: (3) (or SPED elective if a course focusing on characteristics of exceptional children course was taken at the undergraduate level)
- SPED 7514 - Intro/Appl Behav Anlys Credit Hours: (3)
- SPED 7518 - Evidence-Based Prac in ABA Credit Hours: (3)

### Written and oral examinations

### Participation in service experiences

Participation in service experiences in the Psychological Services Center or other agency placements for training purposes.

## Secondary Licensure, (MAT)

### Master of Arts in Teaching (MAT) Degree Program

#### MAT Program Admission

Applicants must complete admissions requirements to be admitted. **All admissions requirements must be met prior to being admitted into the MAT program.** MAT admission requirements are designed to be both competitive and selective, to be knowledge and performance-based, to be clear and consistent, to maintain diversity, and to meet or exceed undergraduate requirements and minimum state requirements.

To be admitted to the MAT program a candidate must complete an application through the Office of Graduate Admissions which includes an official transcript reflecting an earned bachelor's degree with a 2.75 or higher grade point average from an accredited institution. Applicants with a successful professional career may appeal this grade point average requirement. Documentation of a "successful professional career" is necessary and may include, but is not limited to, items such as an administrators' letter of recommendation, teacher evaluations, lesson plans, teaching video, etc.

#### Teacher Education Program (TEP) Admission

1. Students who plan to pursue a graduate program of studies leading to teacher licensure must submit a formal application to the College of Education Teacher Education Program (TEP). Students are encouraged to apply for admission into TEP as soon as they enroll in any College of Education courses.
2. TEP admissions deadlines are September 15 for fall and January 31 for spring.
3. Requirements for provisional admission into TEP include:

1. A grade point average of 3.25 at the graduate level and undergraduate grade point average of 3.0 or higher;
  2. Pass all sections of the CORE Academic Skills for Educators;
  3. Pass the Praxis II Content Knowledge Exam required by the State of Tennessee for the licensure area being pursued.
  4. TBI Background Check
  5. Completion of teacher aptitude survey
4. Requirements for full admission to TEP must be completed prior to the Clinical Teaching Semester and/or the semester candidates enroll in ICL 7993. They include:
1. 3.25 graduate grade point average
  2. Passed Praxis II licensure exams

Passing scores on all required Praxis II Licensure Exams for Licensure and Graduation: Candidates participating in the Clinical Teaching Semester and/or ICL 7993 must submit a successful Teacher Performance Assessment (edTPA). Candidates who seek a Practitioner License must have a composite of 3.0 on the Teacher Evaluation used in their employing district.

Students must be provisionally admitted to the Teacher Education Program (TEP) before completing all Level I courses and starting Level II courses. (Level I Professional Core courses provide requisite foundations for teaching and should be completed before taking Level II Professional Specialization courses that focus on specialized strategies for teaching and learning in educational environments).

Students who do not apply to TEP or fail to maintain criteria during the program will not be allowed to continue in the program.

NOTE: MAT admission, TEP admission, and Graduate School admission are separate procedures.

## Program Requirements

Students seeking licensure and the MAT degree must take a minimum of 30-46 graduate semester hours, depending on program and licensure area. Minimum hours may increase depending on licensure requirements. Students who are employed by a school district on a Practitioner License may have the Level III (clinical teaching semester) waived if they provide the necessary documentation to verify one year of successful teaching experience in their area of licensure with a composite Teacher Evaluation Score of 3.0 or higher. Students in this category should contact the Teacher Education Office in 202 Ball Hall for specific requirements. Please note that all initial licensure candidates, including candidates who on a Job-Embedded Practitioners License, must take ICL 7993, either along with clinical teaching semester or the last semester before applying for license if working on a Practitioner License. This course serves as the culminating experience and will require successful completion of the Teacher Performance Assessment (edTPA) to be able to be recommended for licensure.

## Secondary Licensure Program Requirements

Clinical teaching semester students seeking Secondary Licensure and the MAT degree must complete the following requirements:

Secondary Level I Licensure Requirements:

- IDT 7061 - Instructional Design & EdTech \*\* Credit Hours: (3)
- SPED 7000 - Intro Excpntional Learnr \*\* Credit Hours: (3)
- EDPR 7112 - Adolescent Development & Educ \*\* Credit Hours: 3
- or
- EDPR 7117 - Life-Span Human Dev \*\* Credit Hours: (3)
- or
- ASTL 7703 - Knowledge Of Learner \*\* Credit Hours: (3) [TN eCampus]

- ICL 7030 - Assessment & Evaluation \*\* Credit Hours: (3)  
or
- TELC 7002 - Assessment/Evaluation \*\* Credit Hours: (3) (TN eCampus)

### Secondary Level II and III Licensure Requirements:

- LITL 7545 - Tchg Lit Subject Areas \*\* Credit Hours: (2)

3 hours of appropriate methods courses

- ICL 7174 - Spec Mthds For Lang Ed \*\* Credit Hours: (3)
- ICL 7303 - Eng/Lan Comp Secnd Schl \*\* Credit Hours: (3)
- ICL 7502 - Teaching Mathematics Middle/Secondary Schools \*\* Credit Hours: (3)
- ICL 7602 - Tchg Sci Scndry Schl \*\* Credit Hours: (3)
- ICL 7652 - Tchng Soc Std Mid/Sec \*\* Credit Hours: (3)
- BUED 7655 - Mat & Meth In Voc Educ Credit Hours: (3)
- ICL 7808 - Clinical Teaching Semester \*\* Credit Hours: (3-9)  
and
- ICL 7993 - Professional Seminar \*\* Credit Hours: (3)

### Students are required to complete

Students are required to complete a number of clinical/field experiences during the day in secondary school settings prior to clinical teaching semester. These field experiences will be incorporated into courses required for licensure.

### MAT Degree Requirements

MAT Degree Requirements in addition to the above: EDPR 7521 and ICL 7993 (Professional Seminar & Teacher Performance Assessment-3 Hours). Must be taken prior to clinical teaching semester and ICL 7993.

- EDPR 7521 - Introduction to Research Design and Methodology \*\* Credit Hours: (3)
- ICL 7993 - Professional Seminar \*\* Credit Hours: (3)

### Students who wish to become licensed

Students who wish to become licensed as a teacher of foreign languages that do not require a PRAXIS content knowledge test must pass the ACTFL Oral Proficiency Examination in addition to the requirements for licensure that other students must meet.

### Students seeking secondary licensure must

Students seeking secondary licensure must select one of the following endorsement areas: art education, biology, chemistry, earth science, English, English as a Second Language, French, geography, German, government, history, Latin, library information specialist, marketing, math, physics, political science, psychology, Russian, sociology, Spanish, and other foreign languages.

### Other Requirements

1. All students seeking teacher licensure must successfully pass clinical teaching semester or must document successful completion of professional experience in lieu of clinical teaching semester.
  1. Students who are employed by a school district on a Practitioner License issued by the State of Tennessee may have the Level III clinical teaching semester waived if they provide the necessary documentation to verify one year of successful teaching experience and composite score of 3 or higher on the Teacher Evaluation used by their employing district. They must also be successful with the Teacher Performance Assessment (edTPA) to be recommended for licensure. Students in this category should contact the Licensure Coordinator for specific requirements.
  2. Students must enroll in the appropriate clinical teaching semester course during clinical teaching semester.
  3. Applications for clinical teaching semester must be filed one semester before clinical teaching semester.
  4. Application for documenting successful completion of professional experience in lieu of clinical teaching semester must be filed at the beginning of the first month of the semester in which the candidate plans to complete the approved academic program leading to final licensure. The Teacher Performance Assessment (edTPA) must be completed during the semester the candidate on a Practitioner License plans to apply for their Professional License.
2. Licensure in Tennessee requires acceptable scores on specified Praxis II Tests of pedagogy and teaching content knowledge.
3. Validation of methods courses is not permitted.

## Retention

To remain in the Master of Arts in Teaching (MAT) and the Teacher Education Program (TEP) the student must maintain a graduate grade point average of 3.25. Failure to maintain a 3.25 GPA will result in termination of a candidate's TEP status and will result in academic probation in the MAT program.

## Social Work (MSW)

### MSW Program Requirements

1. 30 semester hours of foundation-level graduate coursework (24 semester hours) and field (6 semester hours), 30 semester hours of specialization-level coursework (18 semester hours) and field (12 semester hours).
2. All courses in the 30 semester hours of foundation-level graduate coursework (24 semester hours) and field (6 semester hours) are required and must be taken with a passing grade before specialization-level coursework, elective semester hours, or independent study semester hours may be undertaken.
3. 12 hours of specialization-level coursework, 6 hours of specialization-level field, and 6 hours of specialization-level field seminar are required courses.
4. 9 semester hours of electives or independent study, included above, must be taken with the non-thesis option.
5. A passing score on the capstone Comprehensive Examination. The comprehensive examination for the Master of Social Work program consists of three components: 1) an evaluation of the student's ability to meet MSW program competencies in field placement; 2) a student self-assessment of her/his ability to meet all MSW program competencies; and 3) completion of a social work licensure practice examination with a score of 75 or higher.

## Graduate Program Requirements

Students in the full-time, spring-start, and extended-study programs are required to complete a minimum of sixty (60) semester hours: Twenty-seven (27) hours are taken in the generalist curriculum, twenty-four (24) hours are required in the specialization curriculum, and nine (9) hours are required as electives.

Students in the advanced standing curriculum are required to complete a minimum of thirty-seven semester hours: Seven (7) hours are required in the generalist curriculum, twenty-four (24) hours are required in the specialization curriculum, and six (6) hours are required as electives.

To accommodate a wide range of student needs, the MSW program of study offers options for full-time (4 semesters of study; 60 credit hours), spring start (5-6 semesters of study; 60 credit hours), and extended study (6 to 8 semesters of study; 60 credit hours). Regardless of progression through the program, the educational components of each sequencing option are the same. The specialist curriculum is generally full-time (2 semesters), although students may choose to extend (3 to 5 semesters). All MSW students follow the same learning expectations for field education and meet the same requirements for graduation. Courses are offered in the traditional classroom settings, online, and in a hybrid format (combination of traditional classroom and online).

## The foundation curriculum

The foundation curriculum provides evidence-based knowledge, behaviors and skills for social work practice with individuals, families, groups, organizations and communities. The concentration curriculum allows students to extend the basic knowledge gained in the foundation to a more focused advanced evidence-based practice with families and children or advanced evidence-based practice with adults and families. Both the foundation and concentration portions of the program emphasize evidence-based practice and critical thinking skills.

Students must follow a structured program of study that includes all of the following foundation courses (30 credit hours) (unless advanced standing):

- SWRK 7001 - Skills Prof Pract SWRK \*\* Credit Hours: (3)
- SWRK 7002 - Individuals and Families Credit Hours: (3)
- SWRK 7003 - Groups Credit Hours: (3)
- SWRK 7005 - Assessmnt,Diag,Psychopath \*\* Credit Hours: (3)
- SWRK 7021 - SW Across the Lifespan \*\* Credit Hours: (3)
- SWRK 7022 - Organizations and Communities Credit Hours: (3)
- SWRK 7030 - Social Welfare Policy/Services \*\* Credit Hours: (3)
- SWRK 7051 - Field Placement I Credit Hours: (3)
- SWRK 7052 - Field Placement II Credit Hours: (3)

Elective (3)

Upon successful completion of at least 8 of the 10 foundation courses

Upon successful completion of at least 8 of the 10 foundation courses students move to the concentration curriculum, which includes 30 credit hours in either the Advanced Practice with Children, Youth, and Families concentration or the Advanced Practice with Adults and Families concentration.

## Retention Requirements

1. Students in the MSW program must comply with all retention standards of the Graduate School at the University of Memphis.
2. All students are required to maintain a cumulative GPA of at least 3.00. Should the student's cumulative GPA fall below that mark, a period of one semester will be allowed to correct the deficiency. At the discretion of the chair, the coordinator of graduate studies in the student's college, and the Assistant Vice Provost for Graduate Studies, this period may be extended one additional semester. Students failing to improve their GPA to an acceptable level in that time will be dismissed from the program.
3. No more than 6 hours of "C-," "C" or "C+" will be applied toward meeting degree requirements. No grade of a D+ or lower will count toward the degree.

4. All degree requirements for the Master of Social Work must be completed within 6 years of initial enrollment.

## Graduation Requirements

All students seeking the Master of Social Work degree must:

1. Successfully complete all courses required in the program of study
2. Abide by the honor's statement which includes a commitment to engage in professional conduct appropriate for a Social Worker at all times in accordance with the Code of Ethics of the National Association of Social Workers (NASW).
3. Adhere to all graduate and University requirements as stated in The University of Memphis Graduate Catalog (available from the Graduate School).
4. Satisfactorily pass a written comprehensive examination in the final semester of study.

## Social Work - Advanced Social Work Practice Across Systems Concentration, (MSW)

### Graduate Program Requirements

Students in the full-time, spring-start, and extended-study programs are required to complete a minimum of sixty (60) semester hours: Twenty-seven (27) hours are taken in the generalist curriculum, twenty-four (24) hours are required in the specialization curriculum, and nine (9) hours are required as electives.

Students in the advanced standing curriculum are required to complete a minimum of thirty-seven semester hours: Seven (7) hours are required in the generalist curriculum, twenty-four (24) hours are required in the specialization curriculum, and six (6) hours are required as electives.

To accommodate a wide range of student needs, the MSW program of study offers options for full-time (4 semesters of study; 60 credit hours), spring start (5-6 semesters of study; 60 credit hours), and extended study (6 to 8 semesters of study; 60 credit hours). Regardless of progression through the program, the educational components of each sequencing option are the same. The specialist curriculum is generally full-time (2 semesters), although students may choose to extend (3 to 5 semesters). All MSW students follow the same learning expectations for field education and meet the same requirements for graduation. Courses are offered in the traditional classroom settings, online, and in a hybrid format (combination of traditional classroom and online).

### MSW Program Requirements

1. 30 semester hours of foundation-level graduate coursework (24 semester hours) and field (6 semester hours), 30 semester hours of specialization-level coursework (18 semester hours) and field (12 semester hours).
2. All courses in the 30 semester hours of foundation-level graduate coursework (24 semester hours) and field (6 semester hours) are required and must be taken with a passing grade before specialization-level coursework, elective semester hours, or independent study semester hours may be undertaken.
3. 12 hours of specialization-level coursework, 6 hours of specialization-level field, and 6 hours of specialization-level field seminar are required courses.
4. 9 semester hours of electives or independent study, included above, must be taken with the non-thesis option.
5. A passing score on the capstone Comprehensive Examination. The comprehensive examination for the Master of Social Work program consists of three components: 1) an evaluation of the student's ability to meet MSW program competencies in field placement; 2) a student self-assessment of her/his ability to meet all MSW program competencies; and 3) completion of a social work licensure practice examination with a score of 75 or higher.

### The foundation curriculum

The foundation curriculum provides evidence-based knowledge, behaviors and skills for social work practice with individuals, families, groups, organizations and communities. The concentration curriculum allows students to extend the basic knowledge gained in the foundation to a more focused advanced evidence-based practice with families and children or advanced evidence-based practice with adults and families. . Both the foundation and concentration portions of the program emphasize evidence-based practice and critical thinking skills.

Students must follow a structured program of study that includes all of the following foundation courses (30 credit hours) (unless advanced standing):

- SWRK 7001 - Skills Prof Pract SWRK \*\* Credit Hours: (3)
  - SWRK 7002 - Individuals and Families Credit Hours: (3)
  - SWRK 7003 - Groups Credit Hours: (3)
  - SWRK 7005 - Assessmnt,Diag,Psychopath \*\* Credit Hours: (3)
  - SWRK 7021 - SW Across the Lifespan \*\* Credit Hours: (3)
  - SWRK 7022 - Organizations and Communities Credit Hours: (3)
  - SWRK 7030 - Social Welfare Policy/Services \*\* Credit Hours: (3)
  - SWRK 7051 - Field Placement I Credit Hours: (3)
  - SWRK 7052 - Field Placement II Credit Hours: (3)
- Elective (3)

Upon successful completion of at least 8 of the 10 foundation courses

Upon successful completion of at least 8 of the 10 foundation courses students move to the concentration curriculum, which includes 30 credit hours in either the Advanced Practice with Children, Youth, and Families concentration or the Advanced Practice with Adults and Families concentration.

### Advanced Social Work Practice Across Systems

- SWRK 7025 - Scientific Methods \*\* Credit Hours: (3)
- SWRK 7026 - Evaluative Research \*\* Credit Hours: (3)
- SWRK 7028 - Advanced Individual Practice Across Systems Credit Hours: 3
- SWRK 7034 - Advanced Community Practice Across Systems Credit Hours: 3
- SWRK 7053 - Field Placement III \*\* Credit Hours: (3)
- SWRK 7054 - Field Placement IV \*\* Credit Hours: (3)
- SWRK 7055 - Integrative Field Seminar I \*\* Credit Hours: (3)
- SWRK 7056 - Integrative Field Seminar II \*\* Credit Hours: (3)

### Retention Requirements

1. Students in the MSW program must comply with all retention standards of the Graduate School at the University of Memphis.
2. All students are required to maintain a cumulative GPA of at least 3.00. Should the student's cumulative GPA fall below that mark, a period of one semester will be allowed to correct the deficiency. At the discretion of the chair, the coordinator of graduate studies in the student's college, and the Assistant Vice Provost for Graduate Studies, this period



may be extended one additional semester. Students failing to improve their GPA to an acceptable level in that time will be dismissed from the program.

3. No more than 6 hours of "C-," "C" or "C+" will be applied toward meeting degree requirements. No grade of a D+ or lower will count toward the degree.
4. All degree requirements for the Master of Social Work must be completed within 6 years of initial enrollment.

## Graduation Requirements

All students seeking the Master of Social Work degree must:

1. Successfully complete all courses required in the program of study
2. Abide by the honor's statement which includes a commitment to engage in professional conduct appropriate for a Social Worker at all times in accordance with the Code of Ethics of the National Association of Social Workers (NASW).
3. Adhere to all graduate and University requirements as stated in The University of Memphis Graduate Catalog (available from the Graduate School).
4. Satisfactorily pass a written comprehensive examination in the final semester of study.

## Social Work - Advanced Standing, (MSW)

### Advanced Standing Program (37 credit hours)

The University of Memphis offers an advanced standing program for students who have completed a Bachelor of Arts in Social Work (BA) or Bachelor of Social Work (BSW) from a Council on Social Work Education (CSWE) accredited program within five years of applying to the MSW program with a minimum GPA of 3.0 overall and 3.3 in social work courses. The five-year rule may be waived if the applicant is a Licensed Baccalaureate Social Worker (LBSW). In addition to the above requirements, applicants must show graduate level proficiency in writing on either the Graduate Record Exam (GRE) or the Praxis Core Academic Skills for Educators Writing Exam.

The Advanced Standing curriculum may be studied entirely online. Please note the field requirements for distance field placements.

NOTE: Students who obtained a BA in SW from the University of Memphis may satisfy the requirement of passing SWRK 7030 through credit by examination. Student must contact advisor to follow this option.

### Students in the Advanced Standing Program

Students in the Advanced Standing Program complete seven credit hours of foundation content and all concentration content. Advanced Standing students take the following generalist curriculum during the summer before their specialization year:

All of the following foundation courses:

- SWRK 7005 - Assessmnt,Diag,Psychopath \*\* Credit Hours: (3)
- SWRK 7030 - Social Welfare Policy/Services \*\* Credit Hours: (3) \*
- SWRK 7050 - Advanced Standing Field \*\* Credit Hours: (1)

\*This requirement may be fulfilled by graduates from the BA in SW at the University of Memphis by credit-by-examination.

## Sociology, (MA)

## MA Degree Program

Graduate students who select sociology as a major should consult with the graduate coordinator.

### Program Admission

Multiple criteria are taken into account when considering applicant admission, including, but not necessarily limited to, GPA for the last 60 hours of the undergraduate degree, letters of reference, GRE scores, the writing sample, and the availability of stipends. In addition, applicants must have satisfactorily completed courses in research methods, sociological theory, and statistics, or demonstrate equivalency.

### Program Requirements

1. Students may choose one of two degree programs:
  1. The thesis program requires thirty (30) semester hours of graduate level work, which includes 3-6 hours of SOCI 7996 - Thesis. Students may not enroll for more than six hours of Sociology 7996 until they have successfully defended their thesis proposal to their thesis committee. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.
    1. At least 24 semester hours of course work must be in sociology.
    2. The oral defense of the thesis counts as a comprehensive examination.
  2. The non-thesis program requires thirty-three (33) semester hours of graduate level work and the passing of both written and oral comprehensive examinations.
    1. At least 27 semester hours must be in sociology.
    2. The student must remove all grades of incomplete from his or her record before taking the comprehensive examination.
3. The successful completion of the following courses is required of all majors: SOCI 6312, SOCI 7210, SOCI 7320. A minimum grade of "3.0" is required in each.
4. No more than 6 semester hours of SOCI 7912 - Directed Indiv Study, may be counted toward the degree without permission from the graduate coordinator.
5. A graduate student whose cumulative grade point average in sociology drops below 3.00 will be placed on departmental review. Being on departmental review at the conclusion of a subsequent semester may result in suspension. Conditions under which continuation in the program beyond two or more semesters on departmental review will be granted must be recommended by the department's graduate committee and the department chair. If, in the opinion of the graduate committee, the chair, the College of Arts and Sciences' Associate Dean of Graduate Programs and Research, and the Vice Provost for Graduate Programs, the student is not making satisfactory progress toward degree completion, the student will be dismissed from the degree program. Students are ineligible for graduate assistantships while on departmental review, but may apply/reapply for an assistantship once their departmental review status has been removed.
6. According to Graduate School policy, students must complete the requirements to remove a grade of "I" (incomplete) within 90 days from the end of the semester or summer term in which it was received or the "I" changes to an "F." If unusual circumstances prevent the student from removing the "I" within 90 days, a 45-day extension may be granted. It is the student's responsibility to request an extension. The department will allow students who received a grade of "I" that changes to an "F" to submit a written request to the graduate committee for a grade change. The request must be made after the student has completed requirements for the course in which the "F" was received and must spell out the reasons why the student was unable to complete the requirements for the course prior to the "I" becoming an "F." In addition, the request must be made within one year of the beginning of the semester or term in which the student enrolled in the course. If the faculty member from which the student received the "I" and the graduate committee agree that extraordinary circumstances prevented the student from completing requirements for the course before the "I" changed to an "F," they will recommend to the department chair that the student's "F" be changed. If the chair agrees with the recommendation of the faculty member and the graduate committee, the chair will recommend to the Vice Provost for Graduate Studies that the student's grade be changed.

## Special Education - Comprehensive (K-12) Licensure, (MAT)

### Master of Arts in Teaching (MAT) Degree Program

#### MAT Program Admission

Applicants must complete admissions requirements to be admitted. **All admissions requirements must be met prior to being admitted into the MAT program.** MAT admission requirements are designed to be both competitive and selective, to be knowledge and performance-based, to be clear and consistent, to maintain diversity, and to meet or exceed undergraduate requirements and minimum state requirements.

To be admitted to the MAT program a candidate must complete an application through the Office of Graduate Admissions which includes an official transcript reflecting an earned bachelor's degree with a 2.75 or higher grade point average from an accredited institution. Applicants with a successful professional career may appeal this grade point average requirement. Documentation of a "successful professional career" is necessary and may include, but is not limited to, items such as an administrators' letter of recommendation, teacher evaluations, lesson plans, teaching video, etc.

#### Teacher Education Program (TEP) Admission

1. Students who plan to pursue a graduate program of studies leading to teacher licensure must submit a formal application to the College of Education Teacher Education Program (TEP). Students are encouraged to apply for admission into TEP as soon as they enroll in any College of Education courses.
2. TEP admissions deadlines are September 15 for fall and January 31 for spring.
3. Requirements for provisional admission into TEP include:
  1. A grade point average of 3.25 at the graduate level and undergraduate grade point average of 3.0 or higher;
  2. Pass all sections of the CORE Academic Skills for Educators;
  3. Pass the Praxis II Content Knowledge Exam required by the State of Tennessee for the licensure area being pursued.
  4. TBI Background Check
  5. Completion of teacher aptitude survey
4. Requirements for full admission to TEP must be completed prior to the Clinical Teaching Semester and/or the semester candidates enroll in ICL 7993. They include:
  1. 3.25 graduate grade point average
  2. Passed Praxis II licensure exams

Passing scores on all required Praxis II Licensure Exams for Licensure and Graduation: Candidates participating in the Clinical Teaching Semester and/or ICL 7993 must submit a successful Teacher Performance Assessment (edTPA). Candidates who seek a Practitioner License must have a composite of 3.0 on the Teacher Evaluation used in their employing district.

Students must be provisionally admitted to the Teacher Education Program (TEP) before completing all Level I courses and starting Level II courses. (Level I Professional Core courses provide requisite foundations for teaching and should be completed before taking Level II Professional Specialization courses that focus on specialized strategies for teaching and learning in educational environments).

Students who do not apply to TEP or fail to maintain criteria during the program will not be allowed to continue in the program.

NOTE: MAT admission, TEP admission, and Graduate School admission are separate procedures.

#### Program Requirements

Students seeking licensure and the MAT degree must take a minimum of 30-46 graduate semester hours, depending on program and licensure area. Minimum hours may increase depending on licensure requirements. Students who are employed by a school

district on a Practitioner License may have the Level III (clinical teaching semester) waived if they provide the necessary documentation to verify one year of successful teaching experience in their area of licensure with a composite Teacher Evaluation Score of 3.0 or higher. Students in this category should contact the Teacher Education Office in 202 Ball Hall for specific requirements. Please note that all initial licensure candidates, including candidates who on a Job-Embedded Practitioners License, must take ICL 7993, either along with clinical teaching semester or the last semester before applying for license if working on a Practitioner License. This course serves as the culminating experience and will require successful completion of the Teacher Performance Assessment (edTPA) to be able to be recommended for licensure.

## Special Education Licensure Program Requirements

Students seeking Special Education Licensure and the MAT degree must complete the following requirements:

### Special Education Level I Licensure Requirements:

- EDPR 7111 - Child Development & Education \*\* Credit Hours: 3
- SPED 7000 - Intro Exceptional Learner \*\* Credit Hours: (3)  
or
- SPED 7001 - Test Meas Excp Chl/Adul \*\* Credit Hours: (3)  
or
- PSYC 7800 - Intro School Psychology Credit Hours: (3)
- ICL 7105 - Lang/Comm Inclusive Classrm \*\* Credit Hours: (3)
- ICL 7106 - Prof/Eth Prac Inclusive Class \*\* Credit Hours: (3)

### Special Education Level II and III Licensure Requirements:

- SPED 7211 - Academic Instruct Sped \*\* Credit Hours: (3)
- SPED 7212 - Content Methods in Special Edu \*\* Credit Hours: (3)
- SPED 7221 - Behavior Mgmt Spec Ed \*\* Credit Hours: (3)
- SPED 7241 - Superv Practicm In Sped Credit Hours: (3-9)  
or
- PSYC 7808 - Psychoed Assessmnt III Credit Hours: (3)
- ICL 7993 - Professional Seminar \*\* Credit Hours: (3)

## Comprehensive (K-12) Program Requirements

- SPED 7042 - Fld Exp/Comprehen Sped Credit Hours: (3-6)
- SPED 7050 - Teach Exceptnl Learner Credit Hours: (2-3)
- SPED 7511 - Intellectual Disabilities Credit Hours: (3)

## MAT Degree Requirements:

In addition to the above:

- EDPR 7521 - Introduction to Research Design and Methodology \*\* Credit Hours: (3)
- ICL 7993 - Professional Seminar \*\* Credit Hours: (3)

## Other Requirements

1. All students seeking teacher licensure must successfully pass clinical teaching semester or must document successful completion of professional experience in lieu of clinical teaching semester.
  1. Students who are employed by a school district on a Practitioner License issued by the State of Tennessee may have the Level III clinical teaching semester waived if they provide the necessary documentation to verify one year of successful teaching experience and composite score of 3 or higher on the Teacher Evaluation used by their employing district. They must also be successful with the Teacher Performance Assessment (edTPA) to be recommended for licensure. Students in this category should contact the Licensure Coordinator for specific requirements.
  2. Students must enroll in the appropriate clinical teaching semester course during clinical teaching semester.
  3. Applications for clinical teaching semester must be filed one semester before clinical teaching semester.
  4. Application for documenting successful completion of professional experience in lieu of clinical teaching semester must be filed at the beginning of the first month of the semester in which the candidate plans to complete the approved academic program leading to final licensure. The Teacher Performance Assessment (edTPA) must be completed during the semester the candidate on a Practitioner License plans to apply for their Professional License.
2. Licensure in Tennessee requires acceptable scores on specified Praxis II Tests of pedagogy and teaching content knowledge.
3. Validation of methods courses is not permitted.

## Retention

To remain in the Master of Arts in Teaching (MAT) and the Teacher Education Program (TEP) the student must maintain a graduate grade point average of 3.25. Failure to maintain a 3.25 GPA will result in termination of a candidate's TEP status and will result in academic probation in the MAT program.

## Special Education - Early Childhood (PreK-1) Licensure, (MAT)

### Master of Arts in Teaching (MAT) Degree Program

#### MAT Program Admission

Applicants must complete admissions requirements to be admitted. **All admissions requirements must be met prior to being admitted into the MAT program.** MAT admission requirements are designed to be both competitive and selective, to be knowledge and performance-based, to be clear and consistent, to maintain diversity, and to meet or exceed undergraduate requirements and minimum state requirements.

To be admitted to the MAT program a candidate must complete an application through the Office of Graduate Admissions which includes an official transcript reflecting an earned bachelor's degree with a 2.75 or higher grade point average from an accredited institution. Applicants with a successful professional career may appeal this grade point average requirement. Documentation of a "successful professional career" is necessary and may include, but is not limited to, items such as an administrators' letter of recommendation, teacher evaluations, lesson plans, teaching video, etc.

## Teacher Education Program (TEP) Admission

1. Students who plan to pursue a graduate program of studies leading to teacher licensure must submit a formal application to the College of Education Teacher Education Program (TEP). Students are encouraged to apply for admission into TEP as soon as they enroll in any College of Education courses.
2. TEP admissions deadlines are September 15 for fall and January 31 for spring.
3. Requirements for provisional admission into TEP include:
  1. A grade point average of 3.25 at the graduate level and undergraduate grade point average of 3.0 or higher;
  2. Pass all sections of the CORE Academic Skills for Educators;
  3. Pass the Praxis II Content Knowledge Exam required by the State of Tennessee for the licensure area being pursued.
  4. TBI Background Check
  5. Completion of teacher aptitude survey
4. Requirements for full admission to TEP must be completed prior to the Clinical Teaching Semester and/or the semester candidates enroll in ICL 7993. They include:
  1. 3.25 graduate grade point average
  2. Passed Praxis II licensure exams

Passing scores on all required Praxis II Licensure Exams for Licensure and Graduation: Candidates participating in the Clinical Teaching Semester and/or ICL 7993 must submit a successful Teacher Performance Assessment (edTPA). Candidates who seek a Practitioner License must have a composite of 3.0 on the Teacher Evaluation used in their employing district.

Students must be provisionally admitted to the Teacher Education Program (TEP) before completing all Level I courses and starting Level II courses. (Level I Professional Core courses provide requisite foundations for teaching and should be completed before taking Level II Professional Specialization courses that focus on specialized strategies for teaching and learning in educational environments).

Students who do not apply to TEP or fail to maintain criteria during the program will not be allowed to continue in the program.

NOTE: MAT admission, TEP admission, and Graduate School admission are separate procedures.

## Program Requirements

Students seeking licensure and the MAT degree must take a minimum of 30-46 graduate semester hours, depending on program and licensure area. Minimum hours may increase depending on licensure requirements. Students who are employed by a school district on a Practitioner License may have the Level III (clinical teaching semester) waived if they provide the necessary documentation to verify one year of successful teaching experience in their area of licensure with a composite Teacher Evaluation Score of 3.0 or higher. Students in this category should contact the Teacher Education Office in 202 Ball Hall for specific requirements. Please note that all initial licensure candidates, including candidates who on a Job-Embedded Practitioners License, must take ICL 7993, either along with clinical teaching semester or the last semester before applying for license if working on a Practitioner License. This course serves as the culminating experience and will require successful completion of the Teacher Performance Assessment (edTPA) to be able to be recommended for licensure.

## Special Education Licensure Program Requirements

Students seeking Special Education Licensure and the MAT degree must complete the following requirements:

Special Education Level I Licensure Requirements:

- EDPR 7111 - Child Development & Education \*\* Credit Hours: 3

- SPED 7000 - Intro Excpntional Learnr \*\* Credit Hours: (3)  
or
- SPED 7001 - Test Meas Excp Chl/Adul \*\* Credit Hours: (3)  
or
- PSYC 7800 - Intro School Psychology Credit Hours: (3)
  
- ICL 7105 - Lang/Comm Inclusive Classrm \*\* Credit Hours: (3)
- ICL 7106 - Prof/Eth Prac Inclusive Class \*\* Credit Hours: (3)

#### Special Education Level II and III Licensure Requirements:

- SPED 7211 - Academic Instruct Sped \*\* Credit Hours: (3)
- SPED 7212 - Content Methods in Special Edu \*\* Credit Hours: (3)
- SPED 7221 - Behavior Mgmt Spec Ed \*\* Credit Hours: (3)
  
- SPED 7241 - Superv Practicm In Sped Credit Hours: (3-9)  
or
- PSYC 7808 - Psychoed Assessmnt III Credit Hours: (3)
  
- ICL 7993 - Professional Seminar \*\* Credit Hours: (3)

#### Early Childhood (PreK-1) Program Requirements

- SPED 6601 - Student Phys/Health Dis Credit Hours: (3)
- SPED 7121 - Ed Prog Presc Ed/Disbl \*\* Credit Hours: (3)
- SPED 7141 - Field Exper Early Child \*\* Credit Hours: (3-6)

#### MAT Degree Requirements:

In addition to the above:

- EDPR 7521 - Introduction to Research Design and Methodology \*\* Credit Hours: (3)
- ICL 7993 - Professional Seminar \*\* Credit Hours: (3)

#### Other Requirements

1. All students seeking teacher licensure must successfully pass clinical teaching semester or must document successful completion of professional experience in lieu of clinical teaching semester.
  1. Students who are employed by a school district on a Practitioner License issued by the State of Tennessee may have the Level III clinical teaching semester waived if they provide the necessary documentation to verify one year of successful teaching experience and composite score of 3 or higher on the Teacher Evaluation used by their employing district. They must also be successful with the Teacher Performance Assessment (edTPA) to be recommended for licensure. Students in this category should contact the Licensure Coordinator for specific requirements.
  2. Students must enroll in the appropriate clinical teaching semester course during clinical teaching semester.
  3. Applications for clinical teaching semester must be filed one semester before clinical teaching semester.

4. Application for documenting successful completion of professional experience in lieu of clinical teaching semester must be filed at the beginning of the first month of the semester in which the candidate plans to complete the approved academic program leading to final licensure. The Teacher Performance Assessment (edTPA) must be completed during the semester the candidate on a Practitioner License plans to apply for their Professional License.
2. Licensure in Tennessee requires acceptable scores on specified Praxis II Tests of pedagogy and teaching content knowledge.
3. Validation of methods courses is not permitted.

## Retention

To remain in the Master of Arts in Teaching (MAT) and the Teacher Education Program (TEP) the student must maintain a graduate grade point average of 3.25. Failure to maintain a 3.25 GPA will result in termination of a candidate's TEP status and will result in academic probation in the MAT program.

## Special Education - Interventionist Licensure, (MAT)

### Master of Arts in Teaching (MAT) Degree Program

#### MAT Program Admission

Applicants must complete admissions requirements to be admitted. **All admissions requirements must be met prior to being admitted into the MAT program.** MAT admission requirements are designed to be both competitive and selective, to be knowledge and performance-based, to be clear and consistent, to maintain diversity, and to meet or exceed undergraduate requirements and minimum state requirements.

To be admitted to the MAT program a candidate must complete an application through the Office of Graduate Admissions which includes an official transcript reflecting an earned bachelor's degree with a 2.75 or higher grade point average from an accredited institution. Applicants with a successful professional career may appeal this grade point average requirement. Documentation of a "successful professional career" is necessary and may include, but is not limited to, items such as an administrators' letter of recommendation, teacher evaluations, lesson plans, teaching video, etc.

#### Teacher Education Program (TEP) Admission

1. Students who plan to pursue a graduate program of studies leading to teacher licensure must submit a formal application to the College of Education Teacher Education Program (TEP). Students are encouraged to apply for admission into TEP as soon as they enroll in any College of Education courses.
2. TEP admissions deadlines are September 15 for fall and January 31 for spring.
3. Requirements for provisional admission into TEP include:
  1. A grade point average of 3.25 at the graduate level and undergraduate grade point average of 3.0 or higher;
  2. Pass all sections of the CORE Academic Skills for Educators;
  3. Pass the Praxis II Content Knowledge Exam required by the State of Tennessee for the licensure area being pursued.
  4. TBI Background Check
  5. Completion of teacher aptitude survey
4. Requirements for full admission to TEP must be completed prior to the Clinical Teaching Semester and/or the semester candidates enroll in ICL 7993. They include:
  1. 3.25 graduate grade point average
  2. Passed Praxis II licensure exams



Passing scores on all required Praxis II Licensure Exams for Licensure and Graduation: Candidates participating in the Clinical Teaching Semester and/or ICL 7993 must submit a successful Teacher Performance Assessment (edTPA). Candidates who seek a Practitioner License must have a composite of 3.0 on the Teacher Evaluation used in their employing district.

Students must be provisionally admitted to the Teacher Education Program (TEP) before completing all Level I courses and starting Level II courses. (Level I Professional Core courses provide requisite foundations for teaching and should be completed before taking Level II Professional Specialization courses that focus on specialized strategies for teaching and learning in educational environments).

Students who do not apply to TEP or fail to maintain criteria during the program will not be allowed to continue in the program.

NOTE: MAT admission, TEP admission, and Graduate School admission are separate procedures.

## Program Requirements

Students seeking licensure and the MAT degree must take a minimum of 30-46 graduate semester hours, depending on program and licensure area. Minimum hours may increase depending on licensure requirements. Students who are employed by a school district on a Practitioner License may have the Level III (clinical teaching semester) waived if they provide the necessary documentation to verify one year of successful teaching experience in their area of licensure with a composite Teacher Evaluation Score of 3.0 or higher. Students in this category should contact the Teacher Education Office in 202 Ball Hall for specific requirements. Please note that all initial licensure candidates, including candidates who on a Job-Embedded Practitioners License, must take ICL 7993, either along with clinical teaching semester or the last semester before applying for license if working on a Practitioner License. This course serves as the culminating experience and will require successful completion of the Teacher Performance Assessment (edTPA) to be able to be recommended for licensure.

## Special Education Licensure Program Requirements

Students seeking Special Education Licensure and the MAT degree must complete the following requirements:

### Special Education Level I Licensure Requirements:

- EDPR 7111 - Child Development & Education \*\* Credit Hours: 3
- SPED 7000 - Intro Excpntional Learnr \*\* Credit Hours: (3)
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- SPED 7001 - Test Meas Excp Chl/Adul \*\* Credit Hours: (3)
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- ICL 7105 - Lang/Comm Inclusive Classrm \*\* Credit Hours: (3)
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### Special Education Level II and III Licensure Requirements:

- SPED 7211 - Academic Instruct Sped \*\* Credit Hours: (3)
- SPED 7212 - Content Methods in Special Edu \*\* Credit Hours: (3)
- SPED 7221 - Behavior Mgmt Spec Ed \*\* Credit Hours: (3)

- SPED 7241 - Superv Practicm In Sped **Credit Hours: (3-9)**  
or
- PSYC 7808 - Psychoed Assessmnt III **Credit Hours: (3)**
- ICL 7993 - Professional Seminar \*\* **Credit Hours: (3)**

## Interventionist Licensure Program Requirements

- LITL 7553 - Literacy Dev K-4 \*\* **Credit Hours: (3)**

## Students in the Interventionist Licensure program are required

Students in the Interventionist Licensure program are required to complete a minimum of 116 clock hours of clinical/field experience during the day in special education settings prior to clinical teaching semester. Students in the Comprehensive and Early Childhood licensure programs are required to complete a minimum of 124 clock hours of clinical/field experience during the day in special education settings prior to clinical teaching semester. These field experiences will be incorporated into courses required for licensure.

## MAT Degree Requirements:

In addition to the above:

- EDPR 7521 - Introduction to Research Design and Methodology \*\* **Credit Hours: (3)**
- ICL 7993 - Professional Seminar \*\* **Credit Hours: (3)**

## Other Requirements

1. All students seeking teacher licensure must successfully pass clinical teaching semester or must document successful completion of professional experience in lieu of clinical teaching semester.
  1. Students who are employed by a school district on a Practitioner License issued by the State of Tennessee may have the Level III clinical teaching semester waived if they provide the necessary documentation to verify one year of successful teaching experience and composite score of 3 or higher on the Teacher Evaluation used by their employing district. They must also be successful with the Teacher Performance Assessment (edTPA) to be recommended for licensure. Students in this category should contact the Licensure Coordinator for specific requirements.
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  3. Applications for clinical teaching semester must be filed one semester before clinical teaching semester.
  4. Application for documenting successful completion of professional experience in lieu of clinical teaching semester must be filed at the beginning of the first month of the semester in which the candidate plans to complete the approved academic program leading to final licensure. The Teacher Performance Assessment (edTPA) must be completed during the semester the candidate on a Practitioner License plans to apply for their Professional License.
2. Licensure in Tennessee requires acceptable scores on specified Praxis II Tests of pedagogy and teaching content knowledge.
3. Validation of methods courses is not permitted.

## Retention

To remain in the Master of Arts in Teaching (MAT) and the Teacher Education Program (TEP) the student must maintain a graduate grade point average of 3.25. Failure to maintain a 3.25 GPA will result in termination of a candidate's TEP status and will result in academic probation in the MAT program.

## Special Education Licensure, (MAT)

### Master of Arts in Teaching (MAT) Degree Program

#### MAT Program Admission

Applicants must complete admissions requirements to be admitted. **All admissions requirements must be met prior to being admitted into the MAT program.** MAT admission requirements are designed to be both competitive and selective, to be knowledge and performance-based, to be clear and consistent, to maintain diversity, and to meet or exceed undergraduate requirements and minimum state requirements.

To be admitted to the MAT program a candidate must complete an application through the Office of Graduate Admissions which includes an official transcript reflecting an earned bachelor's degree with a 2.75 or higher grade point average from an accredited institution. Applicants with a successful professional career may appeal this grade point average requirement. Documentation of a "successful professional career" is necessary and may include, but is not limited to, items such as an administrators' letter of recommendation, teacher evaluations, lesson plans, teaching video, etc.

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  1. A grade point average of 3.25 at the graduate level and undergraduate grade point average of 3.0 or higher;
  2. Pass all sections of the CORE Academic Skills for Educators;
  3. Pass the Praxis II Content Knowledge Exam required by the State of Tennessee for the licensure area being pursued.
  4. TBI Background Check
  5. Completion of teacher aptitude survey
4. Requirements for full admission to TEP must be completed prior to the Clinical Teaching Semester and/or the semester candidates enroll in ICL 7993. They include:
  1. 3.25 graduate grade point average
  2. Passed Praxis II licensure exams

Passing scores on all required Praxis II Licensure Exams for Licensure and Graduation: Candidates participating in the Clinical Teaching Semester and/or ICL 7993 must submit a successful Teacher Performance Assessment (edTPA). Candidates who seek a Practitioner License must have a composite of 3.0 on the Teacher Evaluation used in their employing district.

Students must be provisionally admitted to the Teacher Education Program (TEP) before completing all Level I courses and starting Level II courses. (Level I Professional Core courses provide requisite foundations for teaching and should be completed before taking Level II Professional Specialization courses that focus on specialized strategies for teaching and learning in educational environments).

Students who do not apply to TEP or fail to maintain criteria during the program will not be allowed to continue in the program.

NOTE: MAT admission, TEP admission, and Graduate School admission are separate procedures.

## Program Requirements

Students seeking licensure and the MAT degree must take a minimum of 30-46 graduate semester hours, depending on program and licensure area. Minimum hours may increase depending on licensure requirements. Students who are employed by a school district on a Practitioner License may have the Level III (clinical teaching semester) waived if they provide the necessary documentation to verify one year of successful teaching experience in their area of licensure with a composite Teacher Evaluation Score of 3.0 or higher. Students in this category should contact the Teacher Education Office in 202 Ball Hall for specific requirements. Please note that all initial licensure candidates, including candidates who on a Job-Embedded Practitioners License, must take ICL 7993, either along with clinical teaching semester or the last semester before applying for license if working on a Practitioner License. This course serves as the culminating experience and will require successful completion of the Teacher Performance Assessment (edTPA) to be able to be recommended for licensure.

## Special Education Licensure Program Requirements

Students seeking Special Education Licensure and the MAT degree must complete the following requirements:

### Special Education Level I Licensure Requirements:

- EDPR 7111 - Child Development & Education \*\* Credit Hours: 3
- SPED 7000 - Intro Excpntional Learnr \*\* Credit Hours: (3)  
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- ICL 7105 - Lang/Comm Inclusive Classrm \*\* Credit Hours: (3)
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### Special Education Level II and III Licensure Requirements:

- SPED 7211 - Academic Instruct Sped \*\* Credit Hours: (3)
- SPED 7212 - Content Methods in Special Edu \*\* Credit Hours: (3)
- SPED 7221 - Behavior Mgmt Spec Ed \*\* Credit Hours: (3)
- SPED 7241 - Superv Practicm In Sped Credit Hours: (3-9)  
or
- PSYC 7808 - Psychoed Assessmnt III Credit Hours: (3)
- ICL 7993 - Professional Seminar \*\* Credit Hours: (3)

Licensure areas (choose one):

Interventionist:

- LITL 7553 - Literacy Dev K-4 \*\* Credit Hours: (3)

### Comprehensive (K-12):

- SPED 6000 - Meth/Mat Modrt/Sevr Dis Credit Hours: (3)
- SPED 6601 - Student Phys/Health Dis Credit Hours: (3)
- SPED 7042 - Fld Exp/Comprehen Sped Credit Hours: (3-6)

### Early Childhood (PreK-1):

- SPED 6601 - Student Phys/Health Dis Credit Hours: (3)
- SPED 7121 - Ed Prog Presc Ed/Disbl \*\* Credit Hours: (3)
- SPED 7141 - Field Exper Early Child \*\* Credit Hours: (3-6)

## Students in the Interventionist Licensure program are required

Students in the Interventionist Licensure program are required to complete a minimum of 116 clock hours of clinical/field experience during the day in special education settings prior to clinical teaching semester. Students in the Comprehensive and Early Childhood licensure programs are required to complete a minimum of 124 clock hours of clinical/field experience during the day in special education settings prior to clinical teaching semester. These field experiences will be incorporated into courses required for licensure.

## MAT Degree Requirements:

In addition to the above:

- EDPR 7521 - Introduction to Research Design and Methodology \*\* Credit Hours: (3)
- ICL 7993 - Professional Seminar \*\* Credit Hours: (3)

## Other Requirements

1. All students seeking teacher licensure must successfully pass clinical teaching semester or must document successful completion of professional experience in lieu of clinical teaching semester.
  1. Students who are employed by a school district on a Practitioner License issued by the State of Tennessee may have the Level III clinical teaching semester waived if they provide the necessary documentation to verify one year of successful teaching experience and composite score of 3 or higher on the Teacher Evaluation used by their employing district. They must also be successful with the Teacher Performance Assessment (edTPA) to be recommended for licensure. Students in this category should contact the Licensure Coordinator for specific requirements.
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  4. Application for documenting successful completion of professional experience in lieu of clinical teaching semester must be filed at the beginning of the first month of the semester in which the candidate plans to complete the approved academic program leading to final licensure. The Teacher Performance Assessment (edTPA) must be completed during the semester the candidate on a Practitioner License plans to apply for their Professional License.
2. Licensure in Tennessee requires acceptable scores on specified Praxis II Tests of pedagogy and teaching content knowledge.

3. Validation of methods courses is not permitted.

## Retention

To remain in the Master of Arts in Teaching (MAT) and the Teacher Education Program (TEP) the student must maintain a graduate grade point average of 3.25. Failure to maintain a 3.25 GPA will result in termination of a candidate's TEP status and will result in academic probation in the MAT program.

## Speech-Language Pathology, (MA)

### MA Degree Program

#### Program Admission

1. The admissions committee will review all completed applications. The deadline for applications is February 1 each year for the following Fall semester. Students with background in Communication Sciences and Disorders are admitted in the fall semester only. Students with a background in other areas are admitted in the summer semester. Applicants should have a GPA of 3.00 (on a 4-point system). Application instructions are available online at [www.memphis.edu/csd/programs/profapply.php](http://www.memphis.edu/csd/programs/profapply.php). Applicants should follow the application instructions on the website for current procedures.
2. Students are expected to understand and use English proficiently.

#### Background Requirements

1. To be considered for admission, all applicants must have completed or be in the process of completing a baccalaureate degree from an accredited institution of higher learning. Previous academic preparation in audiology/speech-language pathology is not a requirement for admission.
2. Non-CSD basic science coursework necessary to meet U of M graduation, ASHA certification, and State Licensure includes:
  - Biological Science (3)
  - Statistics (3)
  - Behavioral/Social Science (6)
  - Physical Science (3)

If college-level credits for these courses have not been earned upon enrollment, they will need to be completed during the MA graduate program.

#### General Program Requirements

1. Students must complete a minimum of 60 credit hours and meet the academic and practicum requirements for the Certificate of Clinical Competence of the American Speech-Language-Hearing Association. Additional coursework will be required for those students without undergraduate preparation in audiology/speech-language pathology.
2. Full-time study requires enrollment in clinical practicum, and students must obtain a 3.00 or above in at least 9 semester hours of clinical practicum, and must obtain a 3.00 or above in their last two semesters of clinical practicum. A minimum of 14 credit hours of A USP 7200 and A USP 7208/A USP 8208 must be taken, but more hours may be required in order to meet certification standards.

3. A thesis or non-thesis option is available. Students choosing the non-thesis option must take 3 credits of Research Activity (AUSP 7991 and 7990). NOTE: Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.
4. All students must successfully complete a benchmark examination and a comprehensive examination.

## Retention Requirements

All students enrolled in the School of Communication Sciences and Disorders are expected to attain high academic achievement and maintain professional and ethical conduct. In addition to Graduate School policy, the criteria listed below will be used to determine the retention status of students enrolled in the School.

### General Academic Performance:

1. Grades of less than 2.0 in required courses are considered unacceptable and must be repeated with a minimum grade of 2.00 in order to meet graduation requirements.
2. A student may count two grades of 2.00 toward their degree. Students have the option of repeating two courses in which a grade of 2.00 or less was earned. The student will be dismissed at the end of the semester in which a third grade of 2.00 or less has been earned.
3. Students are expected to maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment at the University of Memphis. A GPA below 3.00 across two consecutive semesters may be grounds for dismissal.

### Professional Performance:

1. Because the MA in Speech-Language Pathology is a professional practice degree, satisfactory acquisition of knowledge and skills for certification as prescribed by the American Speech-Language-Hearing Association is required. Failure to achieve any of these standards for clinical performance may result in dismissal from the program.
2. The cumulative grade of the first two semesters of clinical practicum (7200/7208) must be a B- (2.67) or greater. A cumulative clinic grade for the last five semesters must be at least 3.00. Students must obtain a B (3.00) or better in each of their last 2 semesters.

### Grounds for Dismissal Include:

- Failure to maintain appropriate standards of academic integrity or CSD Policies.
- Failure to follow the ASHA Code of Ethics.
- Failure to follow HIPAA guidelines.
- Failure to meet essential functions as specified in CSD Policy Number E-120.
- Failure to achieve competency as specified in CSD Policy Number E-117.
- A grade of 2.00 or less in clinic practicum will mandate a review within the School and may be grounds for dismissal.
- Failure to pass the benchmark examination.
- Failure to pass the comprehensive examination.

## Specific Requirements

Professional Background Coursework (6 hours, may be taken at the University of Memphis):

1. Audiology: Hearing Disorders/Evaluation (3)
2. Habilitation/Rehabilitation (3)

## Speech-Language Pathology Minimum Degree Requirements:

All listed courses are required unless marked as electives. Courses with an asterisk may be waived for students with an undergraduate background in CSD. Other required courses can be waived under special circumstances and with instructor's permission.

### Basic Communication Processes (12 hours minimum):

- AUSP 7000 - Speech Science **Credit Hours: (3)**
- AUSP 7003 - Anat Phys Spch Mech **Credit Hours: (3)**
- AUSP 7005 - Language Sample Analysis **Credit Hours: (1)**
- AUSP 7006 - Lang & Speech Devel **Credit Hours: (3) \***
- AUSP 7007 - Commun Interaction **Credit Hours: (3)**
- AUSP 7010 - Neurol Bases Comm **Credit Hours: (2)**

### Electives:

- AUSP 7011 - Psycholinguistics **Credit Hours: (3)**
- AUSP 7016 - Sociocultrl Base Comm **Credit Hours: (3)**
- AUSP 7002 - Sem Comm Sciences **Credit Hours: (1-3)**
- AUSP 7008 - Acoustic/Percept Phonetics **Credit Hours: (3)**

### Speech Disorders (15 hours minimum):

- AUSP 7203 - Voice Disorders **Credit Hours: (3)**
- AUSP 7204 - Disorders Phonology/Articulatn **Credit Hours: (3)**
- AUSP 7205 - Fluency Disorders **Credit Hours: (3)**
- AUSP 7206 - Developmental and Acquired Speech Motor Disorders **Credit Hours: (3)**
- AUSP 7209 - Dysphagia/Related Disor **Credit Hours: (3)**

### Electives:

- AUSP 7201 - Clft Palate/Craniofcl Dis **Credit Hours: (3)**
- AUSP 7202 - Motor Speech Dis/Child **Credit Hours: (3)**
- AUSP 7210 - Sem Speech Pathology **Credit Hours: (1-3)**
- AUSP 7309 - Sp Rehab/Head-Neck Path **Credit Hours: (3)**

### Language Disorders (9 hours minimum):

- AUSP 7300 - Lang Dis In Children **Credit Hours: (3)**
- AUSP 7302 - Lang Disorders/Adults I **Credit Hours: (3)**
- AUSP 7305 - Language Learning Disabilities **Credit Hours: (3)**

### Electives



- A USP 7212 - Autism Spect Disord/Rel Disabl **Credit Hours: (3)**
- A USP 7303 - Lang Disordrs/Adults II **Credit Hours: (3)**
- A USP 7304 - Sem Lang Disorders **Credit Hours: (1-3)**
- A USP 7308 - Augmentative/Alternatv Comm **Credit Hours: (3)**

Clinical Practicum (14 hours minimum):

- A USP 7200 - Intro Clin Pract **Credit Hours: (2)**
- A USP 7208 - Clin Exp Spch Lang Path **Credit Hours: (1-3)**

Research-Related Requirements (6 hours minimum)

- A USP 7500 - Eval Resrch Comm Disord **Credit Hours: (1-3)**
- A USP 7990 - Research Activity **Credit Hours: (1-3)**
- A USP 7991 - Introduction to Research Activity **Credit Hours: (1)**
- A USP 7996 - Thesis **Credit Hours: (1-3)** (replaces 7991/7990)

Other Courses (2 hours minimum):

- A USP 7501 - Phonetic Transcript **Credit Hours: (1)**
- A USP 7502 - Intro to Phonetic Transcriptio **Credit Hours: (1) \***
- A USP 7207 - Clinical Instrumentation **Credit Hours: (1-3)** (1 credit)

Electives

- AMSL 6205 - Cultural Sensitivity for the Deaf and Hard of Hearing in Healthcare Settings  
**Credit Hours: 3**
- A USP 7505 - Interprofessional Educ & Pract **Credit Hours: (1-3)**

Certification and State Licensure

School degree requirements meet the academic and clinical training requirements for certification by the American Speech-Language-Hearing Association, teacher certification, and state licensure.

## **Sport and Hospitality Management – Hospitality Management Concentration, (MS)**

### **MS Degree Program**

Program objectives are: (1) to recognize the diverse nature of subject matter embodied within the respective program disciplines; (2) to prepare students to serve in management and leadership positions in the sport or hospitality industry (3) to understand the research findings and theoretical constructs undergirding the respective disciplines; and (4) to understand the critical role of diversity in delivering inclusive hospitality or sport science services.

### **Admission Requirements**

1. Prospective students must use the Graduate School application to apply to the program. The applicant must submit an official transcript for undergraduate and graduate studies. Additionally, as part of the application to the Graduate School, an applicant seeking admission is not required to submit GRE scores. However, official GRE, GMAT, LSAT, or other standardized test scores may be requested by KWS faculty or submitted to support an application.
2. An applicant must also submit the following to the department: 1) two letters of recommendation, 2) an updated resume or curriculum vita, and 3) a 300-500 word statement of goals.
3. An applicant must have graduated with a minimum baccalaureate GPA of 2.5.
4. Completion of an appropriate undergraduate major and a strong background in discipline-specific courses in sport management, hospitality, culinary, casino management, economics, finance, marketing, public relations, communications, commercial recreation, event management, resort management, and/or tourism.
5. Completion of undergraduate work deemed by the concentration committee as prerequisite to graduate courses.
6. Student admissions to the Sport and Hospitality Management (SHM) major are differentially restricted to enable Graduate Faculty to closely mentor their students. To ensure maximum consideration for admission into the major, the SHM admissions committee abides by the Graduate School's established timeline for application (domestic and international). The admission committee may request a personal interview. Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point average, GRE/GMAT/LSAT scores, personal goals statement, relevant employment history, and letters of recommendation.

## Program Requirements

The required number of credit hours is 33.

### Program Core (6 hours):

- SPRT 7010 - Research&Data Analysis in SHM \*\* Credit Hours: (3)
- SPRT 7321 - Theoretical Foundations \*\* Credit Hours: (3)

### Hospitality Management Concentration Requirements (15 hours):

- HPRM 7111 - Hospitality Grad Study Seminar Credit Hours: (1)
- HPRM 7200 - Hospitality Studies Seminar Credit Hours: (2)
- HPRM 7320 - Advanced Hospitality Marketing \*\* Credit Hours: (3)
- HPRM 7331 - Hospitality Services Op Mgmt \*\* Credit Hours: (3)
- HPRM 7340 - Strategic Pricing & Revenue Max Credit Hours: (3)
- HPRM 7442 - Adv Strtg Mgmt in Hosp Credit Hours: (3)

### Successful completion of an oral or written comprehensive examination

Successful defense of the Applied Project or Thesis may serve this purpose.

Consult Graduate School Calendar for submission deadlines.

### Guided electives selected with approval of the advisor (6-9 hours)

### Culminating Experience (3-6 hours)

Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

- HPRM 7996 - Thesis **Credit Hours: (1-6)**  
or
- HPRM 7911 - Hospitality Grad Internship **Credit Hours: (3)**  
or
- HPRM 7950 - Applied Project in Hospitality **Credit Hours: (3)**

## Intent to Graduate submission deadlines

Consult Graduate School Calendar for Intent to Graduate submission deadlines.

## Program Retention Policy

All MS degree students are regularly monitored for completion of any entry-level deficiencies by graduate faculty.

Program retention committees, comprised of selected graduate faculty within the corresponding programs of study, monitor the academic progress of all MS degree candidates in the respective programs. Each committee determines whether or not the student is making sufficient progress and, in case of deficiencies, may recommend additional work or the dismissal of the student from the program. For any student recommended for dismissal, an appeals process is available.

## **Sport and Hospitality Management – Sport Commerce Concentration, (MS)**

### MS Degree Program

Program objectives are: (1) to recognize the diverse nature of subject matter embodied within the respective program disciplines; (2) to prepare students to serve in management and leadership positions in the sport or hospitality industry (3) to understand the research findings and theoretical constructs undergirding the respective disciplines; and (4) to understand the critical role of diversity in delivering inclusive hospitality or sport science services.

### Admission Requirements

1. Prospective students must use the Graduate School application to apply to the program. The applicant must submit an official transcript for undergraduate and graduate studies. Additionally, as part of the application to the Graduate School, an applicant seeking admission is not required to submit GRE scores. However, official GRE, GMAT, LSAT, or other standardized test scores may be requested by KWS faculty or submitted to support an application.
2. An applicant must also submit the following to the department: 1) two letters of recommendation, 2) an updated resume or curriculum vita, and 3) a 300-500 word statement of goals.
3. An applicant must have graduated with a minimum baccalaureate GPA of 2.5.
4. Completion of an appropriate undergraduate major and a strong background in discipline-specific courses in sport management, hospitality, culinary, casino management, economics, finance, marketing, public relations, communications, commercial recreation, event management, resort management, and/or tourism.
5. Completion of undergraduate work deemed by the concentration committee as prerequisite to graduate courses.
6. Student admissions to the Sport and Hospitality Management (SHM) major are differentially restricted to enable Graduate Faculty to closely mentor their students. To ensure maximum consideration for admission into the major, the SHM admissions committee abides by the Graduate School's established timeline for application (domestic and international). The admission committee may request a personal interview. Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point average, GRE/GMAT/LSAT scores, personal goals statement, relevant employment history, and letters of recommendation.

## Program Requirements

The required number of credit hours is 33.

### Program Core (6 hours):

- SPRT 7010 - Research&Data Analysis in SHM \*\* Credit Hours: (3)
- SPRT 7321 - Theoretical Foundations \*\* Credit Hours: (3)

### Sport Commerce Concentration Requirements:

- SPRT 7031 - Sport Finance \*\* Credit Hours: (3)
- SPRT 7420 - Sport Marketing \*\* Credit Hours: (3)
- SPRT 7440 - Promotions in Sport Commerce \*\* Credit Hours: (3)
- SPRT 7503 - Strat Mgmt Sprt Cmrce Org \*\* Credit Hours: (3)

### Guided electives selected with approval of the advisor (9-12 hours)

### Culminating Experience (3-6 hours)

Students electing to write a thesis should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

- HPRM 7996 - Thesis Credit Hours: (1-6)  
or
- SPRT 7605 - Practicum in SPRT \*\* Credit Hours: (3)  
or
- SPRT 7950 - Applied Project in SPRT \*\* Credit Hours: (1-6)

### Successful completion of an oral or written comprehensive examination

Successful defense of the Applied Project or Thesis may serve this purpose.

Consult Graduate School Calendar for submission deadlines.

### Intent to Graduate submission deadlines

Consult Graduate School Calendar for Intent to Graduate submission deadlines.

## Program Retention Policy

All MS degree students are regularly monitored for completion of any entry-level deficiencies by graduate faculty.

Program retention committees, comprised of selected graduate faculty within the corresponding programs of study, monitor the academic progress of all MS degree candidates in the respective programs. Each committee determines whether or not the student

is making sufficient progress and, in case of deficiencies, may recommend additional work or the dismissal of the student from the program. For any student recommended for dismissal, an appeals process is available.

## Theatre - Design and Technical Production Concentration, (MFA)

### MFA Degree Program

#### Program Admission

Admission to the program is competitive and is not automatic upon meeting minimum admission requirements. Students are selected from the pool of qualified applicants; the number of students admitted yearly depends on the availability of program resources required to maintain a high level of student/faculty contact and professional training.

#### Program Requirements

1. Admission to the Graduate School. Note that the Department of Theatre and Dance requires a grade point average of at least 2.5 from an accredited undergraduate institution. As well, the department will require evidence of suitable academic preparation, typically demonstrated by performance in course work in the undergraduate major and/or a writing sample.
2. Submission of a separate departmental application identifying prior theatre education and experience and professional goals. Departmental applications are available from the Department of Theatre and Dance website:  
<http://www.memphis.edu/theatre/>
3. An interview with appropriate program faculty either at the university or at a regional or national conference.

#### Degree Requirements

1. Successful completion of a minimum of 60 semester hours of graduate credit approved by the student's Graduate Advisory Committee. A minimum of 70% (42 hours) of the total required hours must be 7000 level courses. A minimum GPA of 3.0 is required for graduation.
2. All students in the program must take the following core courses:
  - THEA 7564 - Thea Collab & Style **Credit Hours: (3)**
  - THEA 7581 - Sem Drama Theory/Crit **Credit Hours: (3)**
  - THEA 7582 - Analysis Dramatic Lit **Credit Hours: (3)**
  - THEA 7995 - Production Practicum **Credit Hours: (3-6)**

#### Design and Technical Production Group (39 hours)

Each 2 credit course must be taken with 1-credit 7300 level.

- THEA 6511 - Automation & Mechanization **Credit Hours: (2)**
- THEA 6513 - Digital Fabrication **Credit Hours: (2)**
- THEA 6516 - Technical Direction **Credit Hours: (2)**
- THEA 6517 - Scenic Painting II **Credit Hours: (2)**
- THEA 6555 - Scenic Technology **Credit Hours: (2)**
- THEA 6556 - Lighting and Sound Technolgy **Credit Hours: (2)**
- THEA 6557 - Costume Technology I **Credit Hours: (2)**

- THEA 6592 - Thtr Arch/Facilty Plan **Credit Hours: (3)**
- THEA 7312 - Rigging Studio **Credit Hours: (1)**
- THEA 7314 - Collaborative Models for Theatre Professionals **Credit Hours: (1)**
- THEA 7315 - Prof Tech Manage Prac **Credit Hours: (1)**
- THEA 7316 - CAD for Theatre **Credit Hours: (1)**
- THEA 7317 - Production Seminar **Credit Hours: (1)**
- THEA 7546 - Visual History I **Credit Hours: (3)**
- THEA 7547 - Visual History II **Credit Hours: (3)**
- THEA 7561 - Scenic Design I **Credit Hours: (2)**
- THEA 7562 - Lighting Design I **Credit Hours: (2)**
- THEA 7563 - Costume Design I **Credit Hours: (2)**
- THEA 7565 - Costume Design II **Credit Hours: (2)**
- THEA 7566 - Sound Design I **Credit Hours: (2)**
- THEA 7567 - Scenic Design II **Credit Hours: (2)**
- THEA 7569 - Lighting Design II **Credit Hours: (2)**
- THEA 7592 - Professional Theatre Practice **Credit Hours: (6)**
- Elective (2)
- Elective (2)

## Graduation Requirements

1. Successful completion of a minimum of 60 semester hours of graduate credit approved by the student's Graduate Advisory Committee. A minimum of 70% (42 hours) of the total required hours must be 7000 level courses. A minimum GPA of 3.0 is required for graduation.
2. All students with a specialization in Design and Technical Production must take an additional thirty-nine hours of courses determined in consultation with their graduate advisory committee.
3. All students studying Design and Technical Production must read and annotate between 22 and 28 faculty mandated texts pertinent to the degree prior to their Comprehensive Examination. There are 22 texts required of all Design and Technical Production students. Each area of focus (lighting, sound, set, costume, technical production) within the specialization requires its students to read a number of texts (in addition to the 22 texts) pertinent to their particular focus - (lighting 6 texts, sound 4 texts, set 4 texts, costume 4 texts and technical production 3 texts).
4. All M.F.A. candidates must complete:
  - **Plan of Study.** Complete a proposed Plan of Study for the initial Advisory Committee meeting. When approved, place a paper copy in the student's file.
  - **M.F.A. Internship.** To be approved, scheduled, and evaluated by the student's Advisory Committee.
  - **Practicum Project.** To be approved, scheduled, and evaluated by the student's Advisor Committee.

## Other Requirements

Satisfactory completion of a comprehensive examination.

## Graduate Advisory Committee

Each student will have a Graduate Advisory Committee. The functions of the committee shall be:

- To approve the three-year Plan of Study (which may include remedial work).
- To monitor academic and artistic progress.
- To monitor quality and quantity of participation in the theatre production program.
- To approve and evaluate production projects, the Production Practicum Project, the internship, and the comprehensive examination.

## Annual Progress Review

Progress in the MFA program involves more than the successful completion of academic course work. Artistic progress and engagement in the theatre production program of the department are also required.

1. MFA Portfolio Review: Each year all design students will meet with the design faculty and all directing students with the directing faculty for Portfolio Review. At that time, the student's competencies, artistic progress, and professional presentational skills will be evaluated.
2. Graduate Review: Following each semester's Graduate Advisory Committee meeting with the student, the full faculty will meet to review the status and progress of each student. Possible outcomes of the evaluation process include:
  1. continuance in the program without condition;
  2. continuance in the program with conditions; or
  3. non-continuance in the program.
3. Note: A more detailed discussion of program requirements may be found in the Department of Theatre and Dance Graduate Handbook available from the department office.

## Theatre - Directing Concentration, (MFA)

### MFA Degree Program

#### Program Admission

Admission to the program is competitive and is not automatic upon meeting minimum admission requirements. Students are selected from the pool of qualified applicants; the number of students admitted yearly depends on the availability of program resources required to maintain a high level of student/faculty contact and professional training.

#### Program Requirements

1. Admission to the Graduate School. Note that the Department of Theatre and Dance requires a grade point average of at least 2.5 from an accredited undergraduate institution. As well, the department will require evidence of suitable academic preparation, typically demonstrated by performance in course work in the undergraduate major and/or a writing sample.
2. Submission of a separate departmental application identifying prior theatre education and experience and professional goals. Departmental applications are available from the Department of Theatre and Dance website:  
<http://www.memphis.edu/theatre/>
3. An interview with appropriate program faculty either at the university or at a regional or national conference.

#### Degree Requirements

1. Successful completion of a minimum of 60 semester hours of graduate credit approved by the student's Graduate Advisory Committee. A minimum of 70% (42 hours) of the total required hours must be 7000 level courses. A minimum GPA of 3.0 is required for graduation.

2. All students in the program must take the following core courses:
  - THEA 7564 - Thea Collab & Style **Credit Hours: (3)**
  - THEA 7581 - Sem Drama Theory/Crit **Credit Hours: (3)**
  - THEA 7582 - Analysis Dramatic Lit **Credit Hours: (3)**
  - THEA 7995 - Production Practicum **Credit Hours: (3-6)**

All students with a concentration in Directing must take the following courses:

- THEA 7521 - Stage Direction **Credit Hours: (3)**
- THEA 7526 - Directing Studio **Credit Hours: (3)** (1st Year Project)  
THEA 7526 - Directing Studio (2nd year Project)
- THEA 7553 - Styles Of Directing **Credit Hours: (3)**
- THEA 7554 - Seminar In Directing **Credit Hours: (3)**
- THEA 7546 - Visual History I **Credit Hours: (3)**
- THEA 7547 - Visual History II **Credit Hours: (3)**

One of the History / Literature Courses:

- THEA 6544 - Gay and Lesbian Dramatic Literature **Credit Hours: (3)**
- THEA 6548 - Musical Theatre History **Credit Hours: (3)**
- THEA 6549 - Theatre History **Credit Hours: (3)**
- THEA 6539 - Contemporary Theatre History **Credit Hours: (3)**

## Graduation Requirements

1. Successful completion of a minimum of 60 semester hours of graduate credit approved by the student's Graduate Advisory Committee. A minimum of 70% (42 hours) of the total required hours must be 7000 level courses. A minimum GPA of 3.0 is required for graduation.
2. All students studying Directing must read and annotate 45 bibliographies that have been selected by the faculty for the specific area of study. The bibliographies must be read and annotated prior to the Comprehensive Examination date.
3. All M.F.A. candidates must complete:
  - **Plan of Study.** Complete a proposed Plan of Study for the initial Advisory Committee meeting. When approved, place a paper copy in the student's file.
  - **M.F.A. Internship.** To be approved, scheduled, and evaluated by the student's Advisory Committee.
  - **Practicum Project.** To be approved, scheduled, and evaluated by the student's Advisory Committee.

## Other Requirements

Satisfactory completion of a comprehensive examination.

## Graduate Advisory Committee

Each student will have a Graduate Advisory Committee. The functions of the committee shall be:

- To approve the three-year Plan of Study (which may include remedial work).



- To monitor academic and artistic progress.
- To monitor quality and quantity of participation in the theatre production program.
- To approve and evaluate production projects, the Production Practicum Project, the internship, and the comprehensive examination.

## Annual Progress Review

Progress in the MFA program involves more than the successful completion of academic course work. Artistic progress and engagement in the theatre production program of the department are also required.

1. MFA Portfolio Review: Each year all design students will meet with the design faculty and all directing students with the directing faculty for Portfolio Review. At that time, the student's competencies, artistic progress, and professional presentational skills will be evaluated.
2. Graduate Review: Following each semester's Graduate Advisory Committee meeting with the student, the full faculty will meet to review the status and progress of each student. Possible outcomes of the evaluation process include:
  1. continuance in the program without condition;
  2. continuance in the program with conditions; or
  3. non-continuance in the program.
3. Note: A more detailed discussion of program requirements may be found in the Department of Theatre and Dance Graduate Handbook available from the department office.

## World Languages Education, (MAT)

### MAT Program Admission

Applicants must complete admissions requirements to be admitted. **All admissions requirements must be met prior to being admitted into the MAT program.** MAT admission requirements are designed to be both competitive and selective, to be knowledge and performance-based, to be clear and consistent, to maintain diversity, and to meet or exceed undergraduate requirements and minimum state requirements.

To be admitted to the MAT program a candidate must complete an application through the Office of Graduate Admissions which includes an official transcript reflecting an earned bachelor's degree with a 2.75 or higher grade point average from an accredited institution. Applicants with a successful professional career may appeal this grade point average requirement. Documentation of a "successful professional career" is necessary and may include, but is not limited to, items such as an administrators' letter of recommendation, teacher evaluations, lesson plans, teaching video, etc.

### Teacher Education Program (TEP) Admission

1. Students who plan to pursue a graduate program of studies leading to teacher licensure must submit a formal application to the College of Education Teacher Education Program (TEP). Students are encouraged to apply for admission into TEP as soon as they enroll in any College of Education courses.
2. TEP admissions deadlines are September 15 for fall and January 31 for spring.
3. Requirements for provisional admission into TEP include:
  1. A grade point average of 3.25 at the graduate level and undergraduate grade point average of 3.0 or higher;
  2. Pass all sections of the CORE Academic Skills for Educators;
  3. Pass the Praxis II Content Knowledge Exam required by the State of Tennessee for the licensure area being pursued.
  4. TBI Background Check
  5. Completion of teacher aptitude survey

4. Requirements for full admission to TEP must be completed prior to the Clinical Teaching Semester and/or the semester candidates enroll in ICL 7993. They include:
  1. 3.25 graduate grade point average
  2. Passed Praxis II licensure exams

Passing scores on all required Praxis II Licensure Exams for Licensure and Graduation: Candidates participating in the Clinical Teaching Semester and/or ICL 7993 must submit a successful Teacher Performance Assessment (edTPA). Candidates who seek a Practitioner License must have a composite of 3.0 on the Teacher Evaluation used in their employing district.

Students must be provisionally admitted to the Teacher Education Program (TEP) before completing all Level I courses and starting Level II courses. (Level I Professional Core courses provide requisite foundations for teaching and should be completed before taking Level II Professional Specialization courses that focus on specialized strategies for teaching and learning in educational environments).

Students who do not apply to TEP or fail to maintain criteria during the program will not be allowed to continue in the program.

NOTE: MAT admission, TEP admission, and Graduate School admission are separate procedures.

## Program Requirements

Students seeking licensure and the MAT degree must take a minimum of 30-46 graduate semester hours, depending on program and licensure area. Minimum hours may increase depending on licensure requirements. Students who are employed by a school district on a Practitioner License may have the Level III (clinical teaching semester) waived if they provide the necessary documentation to verify one year of successful teaching experience in their area of licensure with a composite Teacher Evaluation Score of 3.0 or higher. Students in this category should contact the Teacher Education Office in 202 Ball Hall for specific requirements. Please note that all initial licensure candidates, including candidates who on a Job-Embedded Practitioners License, must take ICL 7993, either along with clinical teaching semester or the last semester before applying for license if working on a Practitioner License. This course serves as the culminating experience and will require successful completion of the Teacher Performance Assessment (edTPA) to be able to be recommended for licensure.

### Concentration Requirements:

- LING 7101 - Intro To Linguistics I **Credit Hours: (3)**
- LING 7174 - Spec Method/Lang Ed **Credit Hours: (3)**

## Doctoral

### **Applied Physiology and Neuromechanics - Applied Biomechanics Concentration, (PhD)**

#### Admission Requirements and Program Prerequisites

1. Two areas of concentration are offered: (1) Applied Biomechanics and (2) Applied Physiology and Nutrition. Both residential on-ground concentrations are research-intensive and involve close and ongoing interactions between the faculty mentor and student.
2. Applicants to the Ph.D. program are evaluated twice a year. For optimal consideration, completed application packets should be received by April 1 for fall semester admission and October 1 for spring semester admission. Multiple criteria are used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point average, GRE scores (optional), personal goals statement, relevant employment history, letters of recommendation, personal interview (for finalists), and the presence of a willing Full Graduate Faculty mentor in the

program of study. After the program admissions committee screens application materials, finalists are interviewed by no fewer than two Graduate Faculty in the program area. The number of students admitted to the Ph.D. program will depend on the availability of appropriate faculty supervision. Admission processes are available via the University of Memphis Graduate School website. The completed application must include:

- Letters of recommendation from at least three people familiar with the applicant's academic background and aptitude for graduate work that specify in detail the applicant's capabilities and disposition for graduate study as well as for future performance and scholarship.
- A written statement by the prospective candidate of 500-1000 words indicating the intended concentration and area of focus in the Applied Physiology and Neuromechanics (APNM) program, the applicant's present interests and career goals, research and applied interests, and prior research and applied experiences.
- Applicants lacking courses considered by the doctoral committee as being foundational or post-master's applicants from related program areas who lack one or more of the research core courses designated for post-bachelor's Ph.D. students are required to successfully complete those courses within the first year of their matriculation in the program. These prerequisite courses may not be used as part of the program of study.
- English Language Proficiency Requirements: (Applicants for the Ph.D. program must be able to proficiently write and speak English.)
  - Applicants whose native language is other than English and who have earned neither a bachelor's nor a master's degree from a college or university in an English-speaking country must have achieved at least one of the following prior to admission:
    - Duolingo English Test - 110 or higher
    - TOEFL (Test of English as a Foreign Language) – 550 (paper test) or 80 (internet-based test)
    - IELTS (International English Language Testing System- 6.5 or higher
    - PTE (Pearson Test of English) - 59 or higher

## Program Requirements

1. For the Ph.D. degree, a minimum of 72 hours of graduate credit beyond the bachelor's degree and 36 hours beyond the master's degree are required. The overall GPA required for graduation, computed on all graduate-level courses completed whether they are listed on the candidacy form, must be no less than 3.00.
2. Graduate courses at the 6000-level may not be applied toward the official doctoral program of study.
3. Additional coursework beyond the minimum may be required at the discretion of the doctoral advising committee.
4. A minimum of 6 credit hours of dissertation (HMSE 9000) is required. No more than 6 credit hours of the dissertation may be included in the program of study. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write the dissertation.
5. Residency & Professional Scholarship Requirement:
  - The doctoral candidate must be enrolled for a minimum of 9 credit hours on The University of Memphis main campus for each of two successive semesters.
  - Additional minimum requirements for completion of the residency include one first-author publication in a refereed journal in the discipline, one peer-reviewed first-author presentation at a national/international conference (both from research conducted while the candidate is enrolled in the doctoral program), and enrollment and successful participation in zero (0) credit hours of Seminar (HMSE 8142) each fall and spring semester until the comprehensive exams are passed.
  - Data collection associated with the publication requirement is under the direction of the Major Professor.
  - The official publisher/editor letter of acceptance is sufficient to satisfy the publication requirement.
  - The Thesis, Applied Project, or Dissertation does not satisfy this aspect of the Residency & Professional Scholarship Requirement.
6. Full-time Status (9 credit hours):
  - Graduate students that are in the United States on F-1 and J-1 visas are required to attend classes full-time each semester. If it is necessary for the student to drop below full-time hours, they must complete a *Request Authorization for Reduced Course Load* form. Any international student that drops below full-time without prior approval will be considered out of status.

- Doctoral students who have reached the dissertation-only phase of studies are eligible to apply to take a reduced course load while maintaining their full-time enrollment status.
7. Transfer Credit:
- Students with graduate credits earned at another institution, upon matriculation at The University of Memphis, may petition to have these credits applied toward the total number of hours required to earn their degree at The University of Memphis and to use transfer credits as substitutes for specific courses required for the degree.
  - Decisions about such substitutions for courses in the Applied Physiology and Neuromechanics Ph.D. program are made by the Graduate Coordinator for the respective concentrations. The number of transfer credits accepted as substitutions for specific courses is determined on a case-by-case basis and the maximum possible is set by the Graduate School.
  - Requests for transfer-course substitutions should be completed before the end of the first semester in the program.

## Research Core Requirements (18 credit hours)

### Post-Bachelor's (12 credit hours)

Research core courses required before receiving the master's degree are listed below.

- HMSE 8010 - Research Methods in Health Sciences \*\* Credit Hours: 3
- ESMS 8020 - Pub/Prop in Health & Biomed\*\* Credit Hours: (3)
- PUBH 8150 - Biostatistical Methods I Credit Hours: (3)
- PUBH 8152 - Biostatistical Methods II Credit Hours: (3)

### Post-Master's (6 credit hours)

- Research core courses are planned with and approved by the Doctoral Advisory Committee\* with the courses listed below serving as suggestions.  
\* The Doctoral Advisory Committee is comprised of three (3) Graduate Faculty members including the Major Professor, another person from the concentration area, and one person from outside the concentration area. A fourth member may be added as needed.
- Doctoral candidates with a master's degree who have not successfully completed the Post-Bachelor's research core (or its equivalent) must complete the missing course(s) as prerequisites to enrolling in any of the Post-Master's research core courses. These prerequisite courses will not be included in the student's program of study.
- Those who have previously satisfied all or a portion of these requirements may substitute other research design or statistics courses to fulfill the credit-hour requirement at the discretion of the Doctoral Advisory Committee.

## PUBH 8152 or an equivalent is a prerequisite for the following courses

(see individual courses for any additional prerequisites):

- EDPR 8512 - Psychomet Thry/Ed Appl Credit Hours: (3)
- EDPR 8544 - SEM in EDU/Behav Research Credit Hours: (3)
- EDPR 8547 - Survey Research: Sampling Design and Analysis \*\* Credit Hours: (3)
- EDPR 8549 - Multivariate Methods Credit Hours: (3)
- PUBH 8305 - Quant Meth Review Rsch Credit Hours: (3)
- PUBH 8308 - Appl Multivariate Stat Credit Hours: (3)

- PUBH 8309 - Appl Surv Analys in Pub Hlth **Credit Hours: (3)**
- PUBH 8310 - Mixed Model Regression Analys **Credit Hours: (3)**
- PUBH 8311 - Appl Categorical Data Analys \*\* **Credit Hours: (3)**

## Concentration Requirements (30 credit hours)

### Applied Biomechanics

#### Post-Bachelor's Program Entry (12 credit hours)

Post-baccalaureate doctoral candidates without the master's degree must initially complete the following 12 credit hours of coursework within the BMEC concentration:

- ESMS 8123 - Mech Analysis Mtr Skill **Credit Hours: (3)**
  - ESMS 8163 - Advanced Motor Learning **Credit Hours: (3)**
  - ESMS 8201 - Phys Exer Musculoskt\*\* **Credit Hours: (3)**
  - ESMS 8202 - Phys Ex Mtbolc/Cardresp\*\* **Credit Hours: (3)**
- and

#### Post-Master's Program Entry (18 credit hours)

- Post-Master's doctoral candidates will successfully complete a minimum of 18 credit hours of coursework designated by the Doctoral Advisory Committee including those courses listed below as well as others from different academic programs.
  - Twelve of the 18 credit hours must be ESMS 8081 (Supervised Research). Although additional hours of this course may be taken, a maximum of 12 will count toward the program of study.
  - Completion of an Applied Project (6 hrs.) or Thesis (6 hrs.) is an additional requirement for Post-Master's doctoral students who have not already completed one.
- ESMS 8081 - Supervised Research **Credit Hours: (1-6)**
- ESMS 8133 - Current Readings ESMS **Credit Hours: (3)**
- ESMS 8210 - Anlys Muscle Function **Credit Hours: (3)**
- ESMS 8220 - Adv Skltl Msci Str/Fnct **Credit Hours: (3)**
- ESMS 8250 - Motor Control Bhvl Emp **Credit Hours: (3)**
- ESMS 8255 - Anatomy of Motor Control **Credit Hours: (3)**
- ESMS 8300 - Morphological Foundations of Strength Development **Credit Hours: (3)**
- ESMS 8532 - Resrch/Sport Neuromechn **Credit Hours: (3)**
- ESMS 8542 - Adv Kinesiology **Credit Hours: (3)**
- HPRO 8732 - Random Cln Trial/HS **Credit Hours: (3)**
- PUBH 8170 - Epidemiology in PUBH I **Credit Hours: (3)**

#### Electives (12 credit hours):

- Post-Bachelor's Entry (6 credit hours before the master's degree being awarded): Prescribed by the Major Professor and approved by the Doctoral Advisory Committee.
- Post-Master's Entry (6 credit hours): Prescribed by the Major Professor and approved by the Doctoral Advisory Committee.

## M.S. Degree Award

Students admitted into the Ph.D. concentration in Applied Biomechanics or Applied Physiology and Nutrition without a master's degree are eligible for the M.S. degree in Health Studies with a concentration in Exercise, Sport and Movement Sciences (ESMS) or the M.S. degree in Nutrition with a concentration in Nutrition Science (NSCI) upon successful completion (minimum overall GPA of 3.00) of the first 36 credit hours of the approved program of study including designated research design and statistics courses, major field courses, elective courses, and Applied Project (ESMS 7950) or Thesis (HMSE 7996). Students must also pass their master's comprehensive exam which is the oral defense of the Applied Project or Thesis.

## Doctoral Comprehensive Exam

- The comprehensive exam is to be administered by the Doctoral Advisory Committee which is comprised of three (3) Graduate Faculty members including the Major Professor, another person from the concentration area, and one person from outside the concentration area.
- Written and oral portions of the comprehensive exam cover three (3) distinct areas associated with the degree program, one of which is research design/statistics. The remaining test areas are dependent on the program of study and are designated by the Major Professor. Area exams address concepts and issues germane to the concentration and are not limited to the content addressed during coursework.
- Exams are taken upon successful completion of the individually prescribed program of study or in the last semester of same minus dissertation hours.
- The written portion of the exams is administered en masse once per semester during a two-week window at CHS-designated dates and times, typically starting the first or second week following the University-designated midterm.
- All written exam items must be completed in the two-week window.
- Once the entire written portion of the exam has been successfully completed, the oral portion should then be completed before the end of that same semester at the earliest mutual convenience of the 3-person Doctoral Advisory Committee\* and the candidate. The oral exam is not the dissertation prospectus although topics associated with it may be examined by the Committee.
- If a candidate fails one or more sections of the written or oral portions of the comprehensive exam, it will be formally reported to the Graduate School. Subsequently, the committee will prescribe remedial interventions that must be completed before the candidate retakes any portion of the exam. The earliest a candidate may retake a failed written portion of the comprehensive exam is the following semester during the CHS-designated *written comprehensive exam* weeks. A failed portion of the oral exam may be taken at the mutual convenience of the 3-person Doctoral Advisory Committee\* and the candidate, although it should not be taken until the candidate and major professor agree that appropriate remediation has occurred.
- If a student fails the second administration of any area of the entire comprehensive exam, it will result in the degree candidate being dismissed from the program.
- The candidate must pass the written and oral portions of all 3 examination areas before presenting the dissertation prospectus for approval to the 4-person (minimum) Dissertation Committee\*.
  - Doctoral Advisory (3 people) and Dissertation (4 people) committees may have different memberships.
  - The four-person Dissertation Committee must have at least one Graduate Faculty member from a program area other than the base concentration.

## Candidacy

After successful completion of all academic requirements and the doctoral comprehensive examination, a Ph.D. student may apply for candidacy

## Culminating Experience (12 credit hours)

- Post-Bachelor's Entry (6 credit hours):
  - ESMS 7950 – Applied Project\*

\*A first-authored (by the student) published refereed journal article, presenting "original research" in the field and not simply a review of literature, together with an oral presentation and defense of it may be used to satisfy requirements for ESMS 7950 with approval by the Doctoral Advisory Committee. Students must also either enroll in six hours of ESMS 7950 or complete the equivalent credit-by-exam in this scenario. This work is in addition to that required for Residency and Professional Scholarship.

or

- HMSE 7996 – Thesis\*\*

\*\*Students should familiarize themselves with the **Thesis/Dissertation Preparation Guide** before starting to write.

and

- Post-Bachelor's and Post-Master's Entry (6 credit hours):
  - HMSE 9000 – Dissertation\*

\*A dissertation acceptable to the Doctoral Dissertation Committee is a requirement for all doctoral students. This committee is comprised of four Graduate Faculty members, one of which must be from a program area outside the home concentration of the student. Subject recruitment and data collection may not commence until the dissertation prospectus has been approved and any appropriate institutional review board (IRB) or institutional animal care and use committee (IACUC) approvals have been obtained. The dissertation must embody the results of an extended research effort that is an original contribution to the existing body of research within the discipline. The dissertation should reflect the candidate's ability to conduct independent research and logically interpret the facts and phenomena revealed by the research. Upon completion of the written dissertation, each student will orally present and defend the research undertaken. NOTE: All dissertations are written in a journal-ready format approved by the Major Professor except as noted in The University of Memphis Thesis/Dissertation Preparation Guide. Due to page limitations enforced by many scholarly journals, more than one journal paper may be required to cover the breadth of the dissertation research.

## Other Requirements

Consult the **Graduation Information webpage** on the Graduate School website for information about the submission of comprehensive exam results and when to "Apply to Graduate" in the MyMemphis Portal.

## Program Retention Policy

- Students who have been admitted to the program on the condition that they complete doctoral-committee-designated prerequisite course work must make satisfactory progress toward this goal each semester of enrollment. Failure to make satisfactory progress may result in dismissal from the program.
- As per Graduate School policy, students are required to maintain an overall grade point average (GPA) of at least 3.00 for all graduate coursework. Failure to maintain the minimum GPA is considered sufficient cause for dismissal from the program. In addition, a student whose GPA falls below 3.00 is ineligible for a graduate (teaching, administrative, or research) assistantship.
- Students are permitted two (2) grades of 2.00 (C) in courses required in the student's approved program of study. Students are evaluated by Graduate Faculty in the student's concentration area at the end of the semester in which a third course grade of 2.00 (C) or lower is earned for possible dismissal from the program.

## Applied Physics, (PhD)

### PhD Degree Program

Program objectives are: (1) achieve mastery of the core physics principles and apply them for solving research problems in applied physics; (2) propose novel research ideas and hypotheses, develop the research tools to execute the research, perform independent research, and effectively communicate with other professionals in both oral and written formats; (3) become competitive for professional positions in applied physics and related fields.

## Admission Requirements

Admission to the PhD program in Applied Physics at the UofM is open to anyone holding a bachelor's or a master's degree from an accredited college or university. In general, applicants are considered for admission after completion of a degree in physics or closely related discipline with the required core courses in physics.

To be admitted, applicants should fulfill the following requirements:

1. A bachelor's degree in physics or closely related discipline with a minimum of 3.00 GPA in undergraduate courses, and a minimum of 20 semester hours of undergraduate physics, including upper division mechanics, electricity and magnetism, introductory quantum mechanics, and thermal physics, and approved mathematics courses in calculus and differential equations.
2. Graduate Record Examination (GRE) test results with a minimum verbal score of 145, a minimum quantitative score of 150, and a minimum writing score of 3.0.
3. Personal statement of 750-1000 words indicating the interests and career goals of the applicant. The statement should include how his/her PhD studies will prepare him/her in achieving his/her career goals. The statement should include the student's research interests in line with faculty research in the department.
4. Three recommendation letters demonstrating the student's academic strengths, research aptitude and/or capabilities, communication and interpersonal skills, and potential for success in a PhD study.
5. A résumé or curriculum vitae.
6. In addition, international students, from non-English speaking countries, are required to demonstrate proficiency in English through a minimum score of 80 in the Test of English as a Foreign Language (TOEFL) or 7.5 in the International English Language Testing System (IELTS).

In unusual circumstances, where the above admission requirements are not met, the applicant may seek exceptions by contacting the Graduate Coordinator of the Department of Physics and Materials Science (DPMS).

All applications are thoroughly reviewed by the department's Graduate Committee. The admission is based on the overall quality of the applicant's academic background in physics, including GPA, GRE, etc., completed undergraduate and graduate courses in physics and closely related disciplines, research achievements and/or aptitude, and recommendation letters.

## Program Requirements

The proposed PhD Program requires the completion of 72 semester credit hours beyond the Bachelor's Degree or 42 semester credit hours beyond Master's Degree.

Students entering with a bachelor's degree must complete 18 semester hours of Physics Core courses, 6 semester hours of Focus Area Elective courses, 6 semester hours of Breadth Elective courses, and 6 semester hours of Individual Study courses. Up to 36 semester hours of dissertation credit can be applied toward the PhD requirements.

Students entering with a master's degree must complete 3 semester hours of a Physics Core course, 3 semester hours of a Focus Area Elective course, 3 semester hours of a Breadth Elective course, and 3 semester hours of an Individual Study course. Up to 30 semester hours of dissertation credit can be applied toward the PhD requirements.

### Physics Core Courses:

- PHYS 8100 - Classical Mechanics **Credit Hours: (3)**
- PHYS 8200 - Quantum Mechanics I **Credit Hours: (3)**



- PHYS 8300 - Electrodynamics **Credit Hours: (3)**
- PHYS 8520 - Statistical Mechanics **Credit Hours: (3)**
- PHYS 8386 - Methods of Theoretical Physics **Credit Hours: (3)**
- PHYS 7090 - Professional Development Workshop **Credit Hours: (3)**

### Focus Area Courses:

#### Area 1: Solid State Materials

- PHYS 6610 - Solid State Physics **Credit Hours: (3)**
- PHYS 6720 - Materials Physics **Credit Hours: (3)**  
PHYS 8610, Advanced Device Physics

#### Area 2: Soft Matter

- PHYS 6020 - Soft Matter and Biological Physics **Credit Hours: (3)**
- PHYS 7390 - Polymer Physics **Credit Hours: (3)**

#### Area 3: Computational Physics

- PHYS 6420 - Introduction to Computational Physics **Credit Hours: (3)**
- PHYS 8385 - Methods in Computational Physics **Credit Hours: (3)**

#### Area 4: Astrophysics

- PHYS 6050 - Astrophysics I **Credit Hours: (3)**
- PHYS 6051 - Astrophysics II **Credit Hours: (3)**  
PHYS 8050, Advanced Methods in Astrophysics

#### Individual Study Course

- PHYS 7060 - Individual Study in Advanced Physics **Credit Hours: (1-3)**

#### Dissertation Course

- PHYS 9000 - Dissertation **Credit Hours: (1-18)**

### Retention Requirements

A doctoral student in Applied Physics will be retained continuously in the program provided that the following conditions are met:

1. A GPA of at least 3.0 must be maintained. If the student's GPA falls below 3.0 (on a 4.0 scale), a period of one semester or one full summer term will be allowed to correct for the deficiency. The student is dropped from the PhD program if he/she fails to regain a minimum GPA of 3.0. This period may, at the discretion of the student's advisory committee, be extended one additional semester or full summer term.

2. Accumulation of more than 7 hours of graduate coursework with a grade of C+ or lower will result in dismissal from the PhD program.
3. Satisfactory completion of the written PhD Qualifying Examination and a satisfactory performance in the oral PhD Comprehensive exam. The student's advisory committee may grant a second and final attempt. Failure to pass the second attempt will result in mandatory dismissal from the PhD program.
4. Submission of a written research progress report by the student to the student's advisory committee and the Department Chair at the end of each fall and spring semester after dissertation hours have started.

## Graduation Requirements

Consistent with the UofM general graduation requirements for PhD degrees, each student must earn at least 72 hours beyond the bachelor's degree or 42 hours beyond the master's degree. Students entering with a bachelor's degree can apply up to 36 semester hours of dissertation credit toward the PhD requirements. Students entering with a master's degree can apply up to 30 hours of dissertation credit. Early in each student's PhD program, an advisory committee composed of graduate faculty from the DPMS and closely related departments is appointed by the Department's Chair. The role of the advisory committee is to recommend courses to support the student's research and to guide the student in the progress of his/her dissertation research.

For students admitted with a bachelor's degree, no more than 12 semester hours of credit of 6000 level courses will be counted toward the PhD degree.

For students admitted with a master's degree, no more than three semester hours of credit of 6000 level courses will be counted toward the PhD degree.

Of the total semester hour requirement, a minimum of 24 hours must be earned while the student is at UofM. This requirement must include at least one academic year of full-time student status.

The PhD program requires three examinations:

1. **PhD Qualifying Examination:** The PhD Qualifying Examination consists of two exams. The first qualifying exam covers mechanics, electricity and magnetism, optics, and thermodynamics. The second qualifying exam covers quantum mechanics, statistical mechanics, and one subject in the student's focus area. Students must pass both exams.
2. **PhD Comprehensive Exam:** The PhD Comprehensive Exam is an oral exam that primarily covers specialized material related to the dissertation topic. Upon completion of this exam, the Comprehensive Exam Results Form must be completed by the student's Advisory Committee and returned to the Office of the DPMS.
3. **PhD Dissertation Defense:** All PhD students must defend their dissertation during their last year of study. Upon completion and passing of thesis defense, the "Dissertation Final Defense Results" Form must be completed by the student's Advisory Committee and returned to the Graduate School.

## Applied Physiology and Neuromechanics - Applied Physiology and Nutrition Concentration, (PhD)

### Admission Requirements and Program Prerequisites

1. Two areas of concentration are offered: (1) Applied Biomechanics and (2) Applied Physiology and Nutrition. Both residential on-ground concentrations are research-intensive and involve close and ongoing interactions between the faculty mentor and student.
2. Applicants to the Ph.D. program are evaluated twice a year. For optimal consideration, completed application packets should be received by April 1 for fall semester admission and October 1 for spring semester admission. Multiple criteria are used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point average, GRE scores (optional), personal goals statement, relevant employment history, letters of recommendation, personal interview (for finalists), and the presence of a willing Full Graduate Faculty mentor in the program of study. After the program admissions committee screens application materials, finalists are interviewed by

no fewer than two Graduate Faculty in the program area. The number of students admitted to the Ph.D. program will depend on the availability of appropriate faculty supervision. Admission processes are available via the University of Memphis Graduate School website. The completed application must include:

- Letters of recommendation from at least three people familiar with the applicant's academic background and aptitude for graduate work that specify in detail the applicant's capabilities and disposition for graduate study as well as for future performance and scholarship.
- A written statement by the prospective candidate of 500-1000 words indicating the intended concentration and area of focus in the Applied Physiology and Neuromechanics (APNM) program, the applicant's present interests and career goals, research and applied interests, and prior research and applied experiences.
- Applicants lacking courses considered by the doctoral committee as being foundational or post-master's applicants from related program areas who lack one or more of the research core courses designated for post-bachelor's Ph.D. students are required to successfully complete those courses within the first year of their matriculation in the program. These prerequisite courses may not be used as part of the program of study.
- English Language Proficiency Requirements: (Applicants for the Ph.D. program must be able to proficiently write and speak English.)
  - Applicants whose native language is other than English and who have earned neither a bachelor's nor a master's degree from a college or university in an English-speaking country must have achieved at least one of the following prior to admission:
    - Duolingo English Test - 110 or higher
    - TOEFL (Test of English as a Foreign Language) – 550 (paper test) or 80 (internet-based test)
    - IELTS (International English Language Testing System- 6.5 or higher
    - PTE (Pearson Test of English) - 59 or higher

## Program Requirements

1. For the Ph.D. degree, a minimum of 72 hours of graduate credit beyond the bachelor's degree and 36 hours beyond the master's degree are required. The overall GPA required for graduation, computed on all graduate-level courses completed whether they are listed on the candidacy form, must be no less than 3.00.
2. Graduate courses at the 6000-level may not be applied toward the official doctoral program of study.
3. Additional coursework beyond the minimum may be required at the discretion of the doctoral advising committee.
4. A minimum of 6 credit hours of dissertation (HMSE 9000) is required. No more than 6 credit hours of the dissertation may be included in the program of study. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write the dissertation.
5. Residency & Professional Scholarship Requirement:
  - The doctoral candidate must be enrolled for a minimum of 9 credit hours on The University of Memphis main campus for each of two successive semesters.
  - Additional minimum requirements for completion of the residency include one first-author publication in a refereed journal in the discipline, one peer-reviewed first-author presentation at a national/international conference (both from research conducted while the candidate is enrolled in the doctoral program), and enrollment and successful participation in zero (0) credit hours of Seminar (HMSE 8142) each fall and spring semester until the comprehensive exams are passed.
  - Data collection associated with the publication requirement is under the direction of the Major Professor.
  - The official publisher/editor letter of acceptance is sufficient to satisfy the publication requirement.
  - The Thesis, Applied Project, or Dissertation does not satisfy this aspect of the Residency & Professional Scholarship Requirement.
6. Full-time Status (9 credit hours):
  - Graduate students that are in the United States on F-1 and J-1 visas are required to attend classes full-time each semester. If it is necessary for the student to drop below full-time hours, they must complete a *Request Authorization for Reduced Course Load* form. Any international student that drops below full-time without prior approval will be considered out of status.
  - Doctoral students who have reached the dissertation-only phase of studies are eligible to apply to take a reduced course load while maintaining their full-time enrollment status.

#### 7. Transfer Credit:

- Students with graduate credits earned at another institution, upon matriculation at The University of Memphis, may petition to have these credits applied toward the total number of hours required to earn their degree at The University of Memphis and to use transfer credits as substitutes for specific courses required for the degree.
- Decisions about such substitutions for courses in the Applied Physiology and Neuromechanics Ph.D. program are made by the Graduate Coordinator for the respective concentrations. The number of transfer credits accepted as substitutions for specific courses is determined on a case-by-case basis and the maximum possible is set by the Graduate School.
- Requests for transfer-course substitutions should be completed before the end of the first semester in the program.

## Research Core Requirements (18 credit hours)

### Post-Bachelor's (12 credit hours)

Research core courses required before receiving the master's degree are listed below.

- HMSE 8010 - Research Methods in Health Sciences **\*\* Credit Hours: 3**
- ESMS 8020 - Pub/Prop in Health & Biomed**\*\* Credit Hours: (3)**
- PUBH 8150 - Biostatistical Methods I **Credit Hours: (3)**
- PUBH 8152 - Biostatistical Methods II **Credit Hours: (3)**

### Post-Master's (6 credit hours)

- Research core courses are planned with and approved by the Doctoral Advisory Committee\* with the courses listed below serving as suggestions.  
\* The Doctoral Advisory Committee is comprised of three (3) Graduate Faculty members including the Major Professor, another person from the concentration area, and one person from outside the concentration area. A fourth member may be added as needed.
- Doctoral candidates with a master's degree who have not successfully completed the Post-Bachelor's research core (or its equivalent) must complete the missing course(s) as prerequisites to enrolling in any of the Post-Master's research core courses. These prerequisite courses will not be included in the student's program of study.
- Those who have previously satisfied all or a portion of these requirements may substitute other research design or statistics courses to fulfill the credit-hour requirement at the discretion of the Doctoral Advisory Committee.

## PUBH 8152 or an equivalent is a prerequisite for the following courses

(see individual courses for any additional prerequisites):

- EDPR 8512 - Psychomet Thry/Ed Appl **Credit Hours: (3)**
- EDPR 8544 - SEM in EDU/Behav Research **Credit Hours: (3)**
- EDPR 8547 - Survey Research: Sampling Design and Analysis **\*\* Credit Hours: (3)**
- EDPR 8549 - Multivariate Methods **Credit Hours: (3)**
- PUBH 8305 - Quant Meth Review Rsch **Credit Hours: (3)**
- PUBH 8308 - Appl Multivariate Stat **Credit Hours: (3)**
- PUBH 8309 - Appl Surv Analys in Pub Hlth **Credit Hours: (3)**
- PUBH 8310 - Mixed Model Regression Analys **Credit Hours: (3)**

- PUBH 8311 - Appl Categorical Data Analys \*\* Credit Hours: (3)

## Concentration Requirements (30 credit hours)

### Applied Physiology and Nutrition

#### Post-Bachelor's Program Entry (12 credit hours)

Post-baccalaureate doctoral candidates without the master's degree must initially complete the following 12 credit hours of coursework from either the Exercise, Sport and Movement Sciences concentration or the Nutrition Science concentration:

- ESMS 8123 - Mech Analysis Mtr Skill Credit Hours: (3)
- ESMS 8163 - Advanced Motor Learning Credit Hours: (3)
- ESMS 8201 - Phys Exer Musculosklt\*\* Credit Hours: (3)
- ESMS 8202 - Phys Ex Mtbolc/Cardresp\*\* Credit Hours: (3)
- NUTR 8412 - Cellular Nutrition I Credit Hours: (3)
- NUTR 8422 - Cellular Nutrition II Credit Hours: (3)
- NUTR 8100 - Intr Wet Lab Meth Hlth Studies Credit Hours: (3)
- NUTR 8152 - Problems in NUTR Credit Hours: (3)

#### Post-Master's Program Entry (18 credit hours)

- Post-Master's doctoral candidates will successfully complete a minimum of 18 credit hours of coursework designated by the Doctoral Advisory Committee including those courses listed below as well as others from different academic programs.
  - Twelve of the 18 credit hours must be ESMS/NUTR 8081 (Supervised Research). Although additional hours of this course may be taken, a maximum of 12 will count toward the program of study.
  - Completion of an Applied Project (6 hrs.) or Thesis (6 hrs.) is an additional requirement for Post-Master's doctoral students who have not already completed one.
- ESMS 8081 - Supervised Research Credit Hours: (1-6)
- ESMS 8133 - Current Readings ESMS Credit Hours: (3)
- ESMS 8210 - Anlys Muscle Function Credit Hours: (3)
- ESMS 8220 - Adv Skltl Mscl Str/Fnct Credit Hours: (3)
- ESMS 8230 - Exercise Endocrinology Credit Hours: (3)
- ESMS 8240 - Athero/Cvd Patho/Interv Credit Hours: (3)
- ESMS 8250 - Motor Control Bhvl Emp Credit Hours: (3)
- ESMS 8255 - Anatomy of Motor Control Credit Hours: (3)
- ESMS 8300 - Morphological Foundations of Strength Development Credit Hours: (3)
- HPRO 8732 - Random Cln Trial/HS Credit Hours: (3)
- PUBH 8170 - Epidemiology in PUBH I Credit Hours: (3)
- NUTR 8000 - Sport Nutrition\*\* Credit Hours: (3)
- NUTR 8001 - Nutraceuticals and Dietary Sup\*\* Credit Hours: (3)
- NUTR 8002 - Exer & Nutrition Immunology\*\* Credit Hours: (3)
- NUTR 8100 - Intr Wet Lab Meth Hlth Studies Credit Hours: (3)
- NUTR 8412 - Cellular Nutrition I Credit Hours: (3)
- NUTR 8422 - Cellular Nutrition II Credit Hours: (3)

- NUTR 8452 - Comparative Digestion/NUTR Credit Hours: (3)
- NUTR 8454 - Molecular Nutrition Credit Hours: (3)

### Electives (12 credit hours):

- Post-Bachelor's Entry (6 credit hours before the master's degree being awarded): Prescribed by the Major Professor and approved by the Doctoral Advisory Committee.
- Post-Master's Entry (6 credit hours): Prescribed by the Major Professor and approved by the Doctoral Advisory Committee.

### M.S. Degree Award

Students admitted into the Ph.D. concentration in Applied Biomechanics or Applied Physiology and Nutrition without a master's degree are eligible for the M.S. degree in Health Studies with a concentration in Exercise, Sport and Movement Sciences (ESMS) or the M.S. degree in Nutrition with a concentration in Nutrition Science (NSCI) upon successful completion (minimum overall GPA of 3.00) of the first 36 credit hours of the approved program of study including designated research design and statistics courses, major field courses, elective courses, and Applied Project (ESMS 7950) or Thesis (HMSE 7996). Students must also pass their master's comprehensive exam which is the oral defense of the Applied Project or Thesis.

### Doctoral Comprehensive Exam

- The comprehensive exam is to be administered by the Doctoral Advisory Committee which is comprised of three (3) Graduate Faculty members including the Major Professor, another person from the concentration area, and one person from outside the concentration area.
- Written and oral portions of the comprehensive exam cover three (3) distinct areas associated with the degree program, one of which is research design/statistics. The remaining test areas are dependent on the program of study and are designated by the Major Professor. Area exams address concepts and issues germane to the concentration and are not limited to the content addressed during coursework.
- Exams are taken upon successful completion of the individually prescribed program of study or in the last semester of same minus dissertation hours.
- The written portion of the exams is administered en masse once per semester during a two-week window at CHS-designated dates and times, typically starting the first or second week following the University-designated midterm.
- All written exam items must be completed in the two-week window.
- Once the entire written portion of the exam has been successfully completed, the oral portion should then be completed before the end of that same semester at the earliest mutual convenience of the 3-person Doctoral Advisory Committee\* and the candidate. The oral exam is not the dissertation prospectus although topics associated with it may be examined by the Committee.
- If a candidate fails one or more sections of the written or oral portions of the comprehensive exam, it will be formally reported to the Graduate School. Subsequently, the committee will prescribe remedial interventions that must be completed before the candidate retakes any portion of the exam. The earliest a candidate may retake a failed written portion of the comprehensive exam is the following semester during the CHS-designated *written comprehensive exam* weeks. A failed portion of the oral exam may be taken at the mutual convenience of the 3-person Doctoral Advisory Committee\* and the candidate, although it should not be taken until the candidate and major professor agree that appropriate remediation has occurred.
- If a student fails the second administration of any area of the entire comprehensive exam, it will result in the degree candidate being dismissed from the program.
- The candidate must pass the written and oral portions of all 3 examination areas before presenting the dissertation prospectus for approval to the 4-person (minimum) Dissertation Committee\*.
  - Doctoral Advisory (3 people) and Dissertation (4 people) committees may have different memberships.

- The four-person Dissertation Committee must have at least one Graduate Faculty member from a program area other than the base concentration.

## Candidacy

After successful completion of all academic requirements and the doctoral comprehensive examination, a Ph.D. student may apply for candidacy

## Culminating Experience (12 credit hours)

- Post-Bachelor's Entry (6 credit hours):
  - ESMS 7950 – Applied Project\*

\*A first-authored (by the student) published refereed journal article, presenting "original research" in the field and not simply a review of literature, together with an oral presentation and defense of it may be used to satisfy requirements for ESMS 7950 with approval by the Doctoral Advisory Committee. Students must also either enroll in six hours of ESMS 7950 or complete the equivalent credit-by-exam in this scenario. This work is in addition to that required for Residency and Professional Scholarship.

or

- HMSE 7996 – Thesis\*\*

\*\*Students should familiarize themselves with the **Thesis/Dissertation Preparation Guide** before starting to write.

and

- Post-Bachelor's and Post-Master's Entry (6 credit hours):
  - HMSE 9000 – Dissertation\*

\*A dissertation acceptable to the Doctoral Dissertation Committee is a requirement for all doctoral students. This committee is comprised of four Graduate Faculty members, one of which must be from a program area outside the home concentration of the student. Subject recruitment and data collection may not commence until the dissertation prospectus has been approved and any appropriate institutional review board (IRB) or institutional animal care and use committee (IACUC) approvals have been obtained. The dissertation must embody the results of an extended research effort that is an original contribution to the existing body of research within the discipline. The dissertation should reflect the candidate's ability to conduct independent research and logically interpret the facts and phenomena revealed by the research. Upon completion of the written dissertation, each student will orally present and defend the research undertaken. NOTE: All dissertations are written in a journal-ready format approved by the Major Professor except as noted in The University of Memphis Thesis/Dissertation Preparation Guide. Due to page limitations enforced by many scholarly journals, more than one journal paper may be required to cover the breadth of the dissertation research.

## Other Requirements

Consult the **Graduation Information webpage** on the Graduate School website for information about the submission of comprehensive exam results and when to "Apply to Graduate" in the MyMemphis Portal.

## Program Retention Policy

- Students who have been admitted to the program on the condition that they complete doctoral-committee-designated prerequisite course work must make satisfactory progress toward this goal each semester of enrollment. Failure to make satisfactory progress may result in dismissal from the program.
- As per Graduate School policy, students are required to maintain an overall grade point average (GPA) of at least 3.00 for all graduate coursework. Failure to maintain the minimum GPA is considered sufficient cause for dismissal from

the program. In addition, a student whose GPA falls below 3.00 is ineligible for a graduate (teaching, administrative, or research) assistantship.

- Students are permitted two (2) grades of 2.00 (C) in courses required in the student's approved program of study. Students are evaluated by Graduate Faculty in the student's concentration area at the end of the semester in which a third course grade of 2.00 (C) or lower is earned for possible dismissal from the program.

## Audiology, (AuD)

### AuD Program

AuD Program

### Program Admission

1. The admissions committee will review all completed applications. The deadline for applications is February 1 each year for the following Fall semester. Students with background in Communication Sciences and Disorders are admitted in the fall semester only. Students with background in other areas are admitted in the summer semester. Students should have a GPA of 3.00 (on a 4-point system). Application instructions are available online at [www.memphis.edu/csd/programs/profapply.php](http://www.memphis.edu/csd/programs/profapply.php). Applicants should follow the application instructions on the website for current procedures.
2. Students are expected to understand and use English proficiently.

### Assumed Background

1. To be considered for admission, all applicants must have completed or be in the process of completing a baccalaureate degree from an accredited institution of higher learning. Previous academic preparation in audiology/speech-language pathology is not a requirement for admission.
2. The AuD program assumes that students have basic coursework in the biological, physical, mathematical, and social/behavioral sciences, as shown below, by the time of graduation. In addition, students are required to have successfully completed at least a one-credit course in phonetic transcription and two courses in speech-language development/disorders in order to meet program graduation requirements. If this coursework was not completed at the undergraduate level prior to application, it is not required for admission and may be taken during the AuD program at the University of Memphis.
  - Biological Science (3)
  - Mathematical Science, Statistics preferred (3)
  - Physical Sciences (3)
  - Behavioral Sciences (3)
  - Phonetic Transcription (1)
  - Speech-Language Development (3)
  - Speech-Language Disorders (3)

### General Program Requirements

1. Students must complete a minimum of 99 credit hours and meet the academic and practicum requirements for certification in audiology. As noted above, additional coursework will be required for those students without undergraduate preparation in audiology/speech-language pathology.
2. A maximum of 24 credit hours in AUSP 8104 and a maximum of 6 credit hours in AUSP 8125 may be counted toward meeting the 99 credit hour graduation requirement.



3. Students must achieve a grade of 3.00 or better in AUSP 8104 in their last two semesters in residence.
4. All students must complete an evidence-based capstone project for a minimum of 4 hours credit.
5. All students must successfully complete an oral benchmark examination.
6. All students must successfully complete a comprehensive examination containing both written and oral components.

## Retention Requirements

All students enrolled in the School of Communication Sciences and Disorders are expected to attain high academic achievement and maintain professional and ethical conduct. In addition to Graduate School policy, the criteria listed below will be used to determine the retention status of students enrolled in the School.

1. Grades of less than 2.00 in a required course are considered unacceptable. These courses must be repeated with a minimum grade of 2.00 in order to meet graduation requirements.
2. A student may count two grades of 2.00 toward their degree. Students have the option of repeating two courses in which a grade of 2.00 or less was earned. The student will be dismissed at the end of the semester in which a third grade of 2.00 or less has been earned.
3. Students are expected to maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment at the University of Memphis. A GPA below 3.00 across two consecutive semesters may be grounds for dismissal.
4. Grounds for dismissal include:
  - Failure to maintain appropriate standards of academic integrity or CSD Policies.
  - Failure to follow the ASHA and AAA Codes of Ethics.
  - Failure to follow HIPAA guidelines.
  - Failure to pass the oral benchmark examination.
  - Failure to pass the comprehensive examination (including both written and oral components).
  - Failure to meet essential functions as specified in CSD Policy Number E-120.
  - Failure to achieve competency as specified in CSD Policy Number E-117.
  - A grade of less than 2.00 in clinic practicum will mandate a review within the School and may be grounds for dismissal.

## Externship in Audiology

All students will complete an externship during the fourth year of the program, which is consistent with current accreditation requirements. To be eligible for the externship the student must have completed all academic coursework, including the research project, and successfully passed the comprehensive examination. Externship placement is obtained in coordination with the Director of Clinical Services in Audiology. Successful completion of the externship must include the approval of the Director of Clinical Services in Audiology and the Associate Dean of Graduate Studies. The externship provides a comprehensive training environment for students to expand and sharpen their clinical skills. Externships may be in either paid or unpaid positions.

## Specific Requirements

**AuD Degree Requirements (99 hours):**

**Basic Science Coursework (12 Hours):**

- AUSP 8001 - Psychoacoustics **Credit Hours: (3)**
- AUSP 8013 - Calibration and Conservation **Credit Hours: (3)**
- AUSP 8019 - Anat/Phys Aud Sys **Credit Hours: (3)**
- AUSP 8020 - Auditory Processing Across the Lifespan **Credit Hours: (3)**

**Major Area Coursework (39 Hours):**

- A USP 8101 - Audiol Concepts **Credit Hours: (3)**
- A USP 8103 - Diag/Medical Audiology **Credit Hours: (3)**
- A USP 8105 - Vestibular Assmt/Rehab **Credit Hours: (3)**
- A USP 8107 - Auditory Implant Technology **Credit Hours: (3)**
- A USP 8110 - Studebaker Lectures **Credit Hours: (1)** (2 hours required)
- A USP 8113 - Intro to Audiologic Rehab **Credit Hours: (3)**
- A USP 8114 - Intro Hearing Aids **Credit Hours: (3)**
- A USP 8115 - Pediatric Audiology **Credit Hours: (3)**
- A USP 8116 - Hearing Aid Provision **Credit Hours: (3)**
- A USP 8118 - Electrophys Assessmnt **Credit Hours: (3)**
- A USP 8127 - Adult Audiologic Rehab & Aging **Credit Hours: (3)**
- A USP 8128 - Evidenc-Based Pract Ampl **Credit Hours: (3)**
- A USP 8129 - Psychosoc Adj Hrng Impr **Credit Hours: (3)**
- A USP 8032 - Professional Development in Communication Sciences and Disorders **Credit Hours: 1**

#### Clinical Practicum (30 Hours):

- A USP 8104 - Clinicl Exper Audiology **Credit Hours: (1-6)** (24 hours required)
- A USP 8125 - Clinical Extrnshp Audio **Credit Hours: (2-6)** (6 hours required)

#### Other Courses (18 Hours):

- A USP 8121 - Ind Proj Audiology **Credit Hours: (1-6)** (4 credits required)
- Electives (13 credits required)
- A USP 8030 - Tinnitus Treatment and Private Practice **Credit Hours: 3**
- A USP 8031 - Practice Management and Billing in Audiology **Credit Hours: 3**
- A USP 8007 - Commun Interaction **Credit Hours: (3)**
- A USP 8214 - Advanced Clinical Laboratory **Credit Hours: 1-3** (1 credit required)
- A USP 6205 - Cultural Sensitivity for the Deaf and Hard of Hearing in Healthcare Settings **Credit Hours: (3)**
- A USP 7505 - Interprofessional Educ & Pract **Credit Hours: (1-3)**
- or
- A USP 8505 - Interprofessional Educ & Pract **Credit Hours: (1-3)**

## Biological Sciences, (PhD)

### PhD Degree Program

Program objectives are: (1) understand biological principles, concepts, and theories, and in-depth knowledge in a chosen specialty; (2) develop expertise in experimental design, data analysis, and oral and written presentation of research results; and (3) become competitive for professional positions in the biological sciences.

### Program Admission

1. Application should be made online through The University of Memphis Graduate School portal (<https://memphis.liasoncas.com/applicant-ux/#/login>). Information on the application process can be obtained by emailing the department Graduate Studies Coordinator ([grad\\_studies\\_coordinator@memphis.edu](mailto:grad_studies_coordinator@memphis.edu)).
2. Official transcripts of all previous academic coursework must be sent directly from the issuing institution to The University of Memphis Graduate Admissions. Prospective doctoral students must hold either a Masters or a Baccalaureate degree from an accredited institution. An overall minimum grade point average of 3.00 (on a 4.0 scale) is usually competitive. Applicants whose highest degree is from a foreign institution must have their credentials evaluated by any credentialing agency listed on the National Association of Credential Evaluation Services' website. The course-by-course report is required.
3. To be competitive, applicants must have majored in a STEM or STEM education discipline or have completed upper division coursework in one of these disciplines.
4. The Graduate Record Exam (GRE) is not required for admission into our PhD program. Applicants for the PhD program require a faculty advisor for acceptance into the program. Applicants must contact a potential faculty research advisor in the department's graduate program. Faculty research interests are listed on the department website (<https://www.memphis.edu/biology/researchareas/index.php>); applicants are encouraged to interact directly with faculty whose research interests match their own interests. The faculty advisor will send the student and the Graduate Studies Coordinator ([grad\\_studies\\_coordinator@memphis.edu](mailto:grad_studies_coordinator@memphis.edu)) a letter or email stating that (1) he/she is willing to mentor the applicant and (2) how the student will be funded while in the program.
5. Two letters of recommendation from persons capable of assessing the applicant's suitability for graduate work in biology must be submitted to the Graduate School application site (<https://memphis.liasoncas.com/applicant-ux/#/login>) or to the Department Graduate Studies Coordinator ([grad\\_studies\\_coordinator@memphis.edu](mailto:grad_studies_coordinator@memphis.edu)).
6. F1 visa applicants for whom English is not their native language must submit proof that they have taken the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IETLS). The minimum acceptable IELTS score is 6.0. The minimum acceptable TOEFL score is 550 on the paper, 210 on the computer-based, or 79 on the internet-based test. International applicants seeking a Graduate Teaching Assistantships in the Department of Biological Sciences must obtain a score of 26 or higher on the spoken English component of the TOEFL iBT. Alternatively, these applicants can take on campus the SPEAK test (Speaking Proficiency English Assessment Kit) and must obtain a score of 50 or higher in order to be appointed as a Teaching Assistant.
7. Applicants whose highest degree is from a foreign university must provide an evaluation of their credentials by WES or any credentialing agency listed on the National Association of Credential Evaluation Services web site (<http://www.naces.org>).

## Program Requirements

1. A minimum of 72 credit hours beyond the baccalaureate degree is required. For a full-time student, the typical time to complete the program is 5 years. A student entering the PhD program with a MS degree may be awarded 30 semester hours toward the 72 hours requirement. A minimum of 42 semester hours must be taken in residence.
2. A grade point average of 3.0 must be maintained. A student whose grade point average drops below 3.0 will have one semester to raise his or her GPA to 3.0 or better. Continuation of a student who fails to reach a 3.0 overall GPA during two consecutive semesters while in the graduate program is at the discretion of the Graduate Studies Committee (in consultation with the student's Advisory Committee).
3. Mandatory courses include BIOL 8000 (Orientation to Graduate Studies), BIOL 8004 (College Biology Teaching), BIOL 8004, BIOL 8092, BIOL 8103, BIOL 8200, BIOL 8600, and BIOL 9000. BIOL 8000 must be completed during the first year of residence. Attendance at departmental seminars is mandatory. Up to nine hours of BIOL 8092, and five hours of BIOL 8200 can be counted toward the degree requirements. Eighteen credit hours of BIOL 9000 must be completed during the program; no more than 18 hours will be counted toward the degree.
4. Foreign Language and Research - Students are required to demonstrate competence in a foreign language or research tool, or both. Completion of this requirement will be determined by each student's advisory committee.
5. Becoming a Ph.D. Candidate is a two-step process that is usually completed by the end of the third year.
  1. A written and oral presentation of the student's Research Prospectus will be made. Details of the plan of research must be approved by the advisory committee prior to collection of data.

2. All students are required to take and pass a written and oral Comprehensive Examination administered by the student's advisory committee before the end of their sixth semester in residence. The scope of the examination is broad and includes a review of general biological principles.
6. A dissertation will be required of all candidates for the doctoral degree. The dissertation must show a mastery of the techniques of scientific research, and it must be a distinct and new contribution to the body of scientific knowledge. The student's Advisory Committee must approve the topic, prospectus, and the final dissertation. At least 18 hours of research and dissertation credit (BIOL 9000) must be completed during the graduate program; no more than 18 hours will be counted toward the degree. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.
7. A minimum of one published or fully accepted paper in a national or international peer reviewed scientific journal approved by the advisory committee is required.
8. Dissertation Defense and Final Examination - The final examination will be conducted by the student's advisory committee. The committee will consist, insofar as possible, of the same persons involved in the specialized knowledge examination. The final examination will be an oral defense of the dissertation and will be announced and open to the public. Upon successful completion of the examination and all degree requirements, the committee will recommend awarding the PhD.

## Biomedical Engineering, (PhD)

### PhD Degree Program

The Department of Biomedical Engineering at The University of Memphis and the Department of Orthopaedic Surgery and Biomedical Engineering at The University of Tennessee Health Science Center, Memphis, participate in the Joint Graduate Program in Biomedical Engineering. The Joint Program offers graduate programs leading to the degrees of Master of Science and Doctor of Philosophy in Biomedical Engineering. Students may elect courses of study in the following areas:

- Biomechanics, Movement Science, and Rehabilitation
- Biomaterials, Drug Delivery and Regenerative Technology
- Biosensors and Electrophysiology
- Cellular Biomechanical Responses

All graduate students must comply with the general requirements of the Graduate School (see Admission Regulations, Academic Regulations, and Minimum Graduate Degree Requirements) and the program requirements of the degree being pursued. The Joint Graduate Program uses an application website hosted at: <https://uthsc2023.liaisoncas.com/applicant-ux/#/login>.

#### ENTRANCE EXAMINATION

Although not required applicants may optionally submit scores for the ETS® GRE® General Test, if taken within five years of the application date. The GRE revised General Test is a third-party evaluative tool administered by the ETS (Educational Testing Service) organization. Test scores must be sent directly to Graduate Admissions from the testing agency. For the Joint Graduate Program in Biomedical Engineering, use the UTHSC code number for reporting GRE and TOEFL scores: 1850.

#### TRANSCRIPTS and LETTERS OF RECOMMENDATION

Programs in the academic Joint Graduate Program in Biomedical Engineering, a collaboration between the University of Tennessee Health Science Center (UTHSC) and the University of Memphis, require three (3) letters of recommendation from separate evaluators attesting to qualifications for successfully undertaking graduate studies, a personal statement, and curriculum vitae. All application materials including college transcripts and test score information should be submitted to UTHSC through the common application web portal hosted by UTHSC: <https://uthsc2023.liaisoncas.com/applicant-ux/#/login>

The evaluators/faculty members who you choose should be individuals that you believe are best able to comment objectively on your intellectual and professional achievements and potential.

We may call or write your recommenders for more information.

## INTERNATIONAL APPLICANTS

**Evaluation of Credentials:** Applicants whose highest degree is from a foreign university must have their credentials evaluated. Evaluations done by any credentialing agency listed on the National Association of Credential Evaluation Services web site (<http://www.naces.org>) are acceptable. A course-by course report is required and must be sent directly to Graduate Admissions from the credentialing agency.

**English Conditional Admission:** International students are required to demonstrate a strong grasp of the English language before admission into graduate programs. Conditional admission may be granted depending on individual academic departmental policy. If English conditional admission is offered, students will need to register for English skills assessment and take instructional sessions (if required as a result of that assessment) through the University's Intensive English for Internationals (IEI) program ([www.memphis.edu/iei](http://www.memphis.edu/iei)). Upon successful completion of the requisite sessions, as determined by IEI, the student's English skills will be considered up to standard and the TOEFL/IELTS requirement may be waived depending on specific academic department policy. The student can then proceed into their graduate academic program. Please note that in order to have a complete application packet, students seeking English conditional admission will need to simultaneously apply for the IEI program through the link above and to the Graduate School (<http://www.memphis.edu/graduateadmissions>).

Please note that a student cannot be a graduate assistant (GA) until she/he has been fully admitted to the Biomedical Engineering graduate program. Questions can be directed to the program's graduate coordinator. Students will pay IEI fees until they meet the language criterion. If courses are taken outside of IEI, the student will be charged additional tuition at the regular rate.

## Admission Requirements

In addition to meeting the minimum admission requirements of the two universities and the Herff College of Engineering, applicants should meet the following criteria:

1. An appropriate bachelor's degree (biomedical, chemical, electrical, mechanical, or others as defined by the Joint Program);
2. An undergraduate GPA of at least 3.00 from an accredited college or university;
3. Applicants whose native language is other than English and who have earned neither a bachelor's nor a master's degree from a college or university in an English-speaking country must have achieved a TOEFL score of 85 or better overall with no sub score below 20, or an IELTS score of 6.5 or better overall with no sub score below 6.0, or PTE score of 57 or better in each sub score, or Duolingo of 110 or better overall with no sub score below 95 of (earned within 2 years prior to application). Any applicant whose first language is not English but who has earned a baccalaureate or master's degree from a college or university in an English-speaking country where instruction was in English may be exempted from the requirement for the TOEFL or IELTS examination.

These are the minimum program admission requirements. Meeting minimum requirements does not guarantee admission into the Joint Program. Applicants are further advised that the department reserves the right to deny some applications for admission because of limited availability of faculty, funding or physical facilities to accommodate the applicant's research interests. In unusual circumstances where the above admission requirements cannot be met, an applicant may seek exceptions by contacting the Coordinator of Graduate Studies for the Joint Program.

## Graduation Requirements

### Students admitted to the PhD program with a bachelor's degree

Students admitted to the PhD program will complete 72 hours of work after the BS degree. The generic distribution of those hours is 30 credits in early doctoral education, i.e., master's degree level, another 18 credits at late graduate (8000) level, 24 credit hours of dissertation research (BIOM 9000), and a noteworthy dissertation, which is typically demonstrated by peer-reviewed publications. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide.

Students admitted to the PhD program with a bachelor's degree must complete a master's degree as part of their degree plan. Though an appeal process for direct progress to the PhD exists, few should expect to bypass the MS.

- **BIOM 9000 - Dissertation Credit Hours: (1-12)**

## Students admitted to the PhD program with a master's degree

Students admitted to the PhD program with a master's degree must complete an additional 42 credit hours. This will be composed of 15 credit hours of elective focus area courses (core and elective focus area courses approved by project advisory committee), 3 credit hours of project (BIOM 8991), 24 credit hours of dissertation research (BIOM 9000), and a noteworthy dissertation, which is typically demonstrated by peer-reviewed publications. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide.

Students admitted to the PhD program with a master's degree from any other program must work with the graduate program coordinators and their dissertation committee to develop the required degree plan.

- **BIOM 8991 - Project I Credit Hours: (1-3)**
- **BIOM 9000 - Dissertation Credit Hours: (1-12)**

## Requirements for all PhD students

- The exact designation of courses for particular PhD students is left to the faculty committee, graduate coordinator, and chair.
- All PhD students are required to complete a comprehensive examination with at least a minimum passing score on the written portion and a satisfactory performance on the oral portion of the exam. A second and final attempt to pass this examination may be granted by the student's advisory committee; failure to pass this exam will result in dismissal from the program.
- All PhD students are required to complete a proposal defense examination (written proposal and oral defense) as administered by the dissertation faculty committee.
- A Final Oral Examination is required with optional oral and written questions related to the dissertation presented, after notice of date and time per rules of Graduate School, to the faculty committee and visitors.
- Publication of portions of the dissertation are expected; numbers and types are set by the individual's faculty committee and are expected to be in concert with typical counts and types for that section of biomedical engineering.

## Professional Development Requirements

1. PhD degree seeking students are required to attend Joint Program weekly seminars as scheduled each semester while enrolled as a full-time student.
2. Each semester after the first semester, each PhD student is to meet with their faculty committee; he or she will review progress to date, note planned dates for exams and presentations, and discuss research efforts for the dissertation.
3. PhD degree seeking students must complete ethics and professional training offered by the Joint Program.

## Retention Policy

1. Students who have been admitted to the program on the condition that they complete prerequisite course work must make satisfactory progress toward this goal each semester of enrollment. Failure to make satisfactory progress may result in dismissal from the program.
2. All students are required to maintain a grade point average (GPA) of at least 3.00. Failure to maintain the minimum GPA is considered sufficient cause for being dismissed from the program. In addition, a student whose GPA falls below 3.0 is ineligible for a graduate assistantship.

3. No more than seven (7) hours of C, C+, or C- grades will be counted toward degree requirements. Grades of D or F are not accepted for credit for graduation purposes, but the grades are computed in the overall cumulative GPA. Students will be evaluated by the Joint Program faculty at the end of the semester in which a third grade C, C+, or C- or lower is earned for possible dismissal from the program.
4. Passing the proposal defense examination within 18-24 months upon matriculating into the PhD degree program (completion of the master's degree).

## Business Administration (PhD)

The mission of the PhD program in Business Administration is to prepare students primarily for academic careers in research-oriented institutions of higher education and secondarily for research careers in organizations.

Program objectives are: (1) an acquisition of an advanced level of knowledge in one or more functional areas of business or in applied economics and an expert level of knowledge in one or more subfields of a business function or economics; (2) ability to conduct significant, independent research that extends the knowledge base in a business function or economics; (3) capacity to teach effectively within the business or economics discipline; (4) capacity to communicate advanced-level knowledge to others in the academic and professional community; and (5) ability to compete effectively for faculty positions in respected colleges and universities or other high-level professional positions.

Students with master's or professional degrees in business administration, public administration, economics, law, engineering, mathematics, computer science, psychology, sociology, and the physical sciences will find this background provides important preparation for entering the PhD program.

The University has the academic resources to provide the doctoral applicant with a balanced education that provides both the qualitative and quantitative skills required of the modern business education professional.

The PhD student at the Fogelman College must select a concentration from one of six departments: accounting, economics, finance, management, management information systems, and marketing.

Visit this website for more information: [www.memphis.edu/fcbephd](http://www.memphis.edu/fcbephd).

## Program Admission and Prerequisites

Individuals meeting the general requirements for admission to the Graduate School for doctoral-level programs shall be eligible to apply for admission to the PhD in Business Administration program. Applicants must indicate their area of concentration when filing their initial application.

Admission to the PhD program may be granted to qualifying applicants who show high promise of success in doctoral business study. The principal criterion for admission is evidence of superior achievement in prior academic work, coupled with outstanding promise for future contributions as a business scholar. The concentration department and the Associate Dean of Academic Programs will review and evaluate each applicant. **Some concentrations may not admit students to the doctoral program every year. Interested applicants should contact the departmental PhD coordinators before applying to the program.**

Criteria used for admission consideration is competitive based on the applicant's:

1. **Academic record.** Applicant's grade point average should be 3.2 or higher on a 4.0 basis.
2. **Testing.** Applicants must present an acceptable score on a recent (five years or less) Graduate Management Admission Test (GMAT) or the Graduate Record Examination (GRE).
3. **Recommendations.** Three letters of recommendation are required from former professors, colleagues, and/or business executives.
4. **Personal Statement and Resume.** Applicants **must submit** a written statement of career plans and objectives no more than two-pages in length, and a current resume of academic and professional experiences.

5. **Mathematics.** Applicants must submit a transcript indicating the successful completion of a course in calculus.

6. **Interview.** Applicants may appear before the departmental admission committee for a personal interview.

Prerequisites in the functional areas of business are determined by the department. A typical applicant has completed a master's degree in business, economics, or other relevant discipline.

Following admission, a student will be assigned to a department program committee composed of faculty members from the student's department of concentration. The program committee is responsible for planning and approving the program requirements, and for guiding and monitoring the progress of the student through the program.

## Program Requirements

A minimum of 72 hours beyond the bachelor's degree is required. A minimum of 39 hours of the curriculum below must be completed at the University of Memphis after admission to the program. Most concentrations require more than 39 hours.

*Residency:* Students enrolled in the doctoral program must also meet the university residency requirements as defined in the Minimum Degree Requirements section of this catalog.

## Course Requirements

*Research Core* (at least 12 semester hours): Includes courses designed to develop and improve research skills. Students may be required to acquire competence using research tools and techniques beyond and above what is required with the research core. Courses in the Research Core must be approved by the student's departmental PhD coordinator.

*Concentration* (at least 30 semester hours): A minimum of 12 hours of 7/8000 level courses is required in the student's chosen concentration. Possible concentrations are Accountancy, Economics, Finance, Management, Management Information Systems, or Marketing. Additional supporting coursework may be selected from these concentrations or from approved areas outside the college. Courses graded an S or U may not be used to satisfy the minimum hours required for Research Core or Concentration.

*Dissertation* (minimum of 6 but not more than 18 semester hours): Major research of an original and creative nature is required and must meet the requirements of the Graduate School. The dissertation is the research capstone of the PhD program and must be a significant contribution to the study of Business Administration. The student will register for dissertation credit hours every semester after passing the comprehensive examinations. Students planning to graduate in the summer must be registered for dissertation credit. The student must show satisfactory progress over a 2-year period of time. Unsatisfactory progress towards dissertation completion will be grounds for dismissal from the program. After the dissertation committee approves the dissertation proposal, the candidate will be given a final oral examination primarily dealing with the dissertation. The dissertation committee will conduct this examination and all members must be present at the examination. If the student's performance on this examination is satisfactory as judged by the committee, all requirements for the degree will be complete. **In the Fogelman College, no credit earned more than 10 years prior to the student's date of completion of the doctoral degree will be applied toward satisfying requirements of the doctoral degree.** Students should note that the 10-year time limit is more stringent than the University Graduate School policy. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

## Comprehensive Examinations

Each student will have comprehensive examinations in the concentration. Comprehensive examinations in the concentration should be taken as soon as all of the course work required for the PhD degree has been successfully completed. Exceptions can be made at the discretion of the Associate Dean for Academic Programs. After satisfactorily completing the written comprehensive examinations, each student must pass an oral examination integrating all work. The student's program committee will organize and administer the oral examination. Some concentrations require qualifying examinations covering specific courses or content, typically given after the first or second year of coursework, which must be successfully completed prior to sitting for the comprehensive exam. Passing of the qualifying exam can allow students in the Economics concentration to apply



some course work towards the MA degree before continuing with the doctoral degree requirements. Failure to pass the qualifying exam after two attempts will result in termination from the program.

## Expenses

### Credit Hour Surcharge

A surcharge of \$35 per credit hour for graduate students has been approved by the Tennessee Board of Regents. The purpose of the surcharge on these business courses is to facilitate the continuous improvement of the college and compliance with the standards of the Association to Advance Collegiate Schools of Business International (AACSB International).

### Financial Assistance

A number of doctoral and master's graduate assistantships are available to full-time students. Doctoral assistantships may be available to those students with strong GMAT or GRE scores. Graduate assistants provide part-time assistance to the concentration in teaching and/or research. Current compensation for doctoral students can range from \$9,000 to \$15,000 per academic year, for master's students a minimum of \$6,000 per academic year, in addition to a full tuition waiver. The Fogelman College also has a limited number of doctoral fellowships available.

## **Business Administration - Accounting Concentration, (PhD)**

The goal of the Ph.D. concentration in Accounting is to develop the next generation of committed scholars and excellent teachers by providing an active and stimulating intellectual environment. The Accounting Ph.D. program prepares doctoral students for research-oriented academic positions at well-regarded universities and colleges that demand solid teaching skills. We train doctoral students in classroom management and the development of solid teaching skills. Research in the School of Accountancy focuses on economic based issues of importance to the accounting and business community such as the impact of accounting information on capital market participants as well as other firm stakeholders.

Reflecting the research orientation of the faculty, development of research and academic writing skills is continually emphasized throughout the Ph.D. program. The faculty goal for matriculation is four years. In seminars, doctoral students are encouraged to start working on the framework for the dissertation early in the first year aligned with research experts in the field. In the first two years, students focus on their coursework, are involved in a research workshop, and work closely with faculty on a research project. Students take their comprehensive examinations at the beginning of the third year. In their third and fourth years of study, students develop and present their thesis proposal, then complete and defend the dissertation.

A major strength of the Ph.D. program in accounting is that its graduate faculty members are student-oriented. Research with faculty is encouraged and fostered in a highly collegial environment. We emphasize a close faculty-doctoral student interaction. Only a few students are admitted into the doctoral program each year and they are encouraged to work closely as a team cohort. Doctoral students are involved in all phases of faculty research, including co-authorship of research papers and presentations at professional meetings. Most of the current doctoral students are CPAs with business experience at the most prestigious corporate accounting and public accounting firms.

Our graduate faculty members have published books and received academic honors that include chaired professorships. The accounting faculty publish their research in the top tier accounting journals such as *The Accounting Review*, *Contemporary Accounting, Research, Journal of Accounting and Economics* as well as the highly regarded journals of the American Accounting Association in sub-discipline fields, among others.

For admission, prerequisites, and program information, see the college website at: <http://www.memphis.edu/fcbephd/>

## **Business Administration - Economics Concentration, (PhD)**

The objective of the PhD in Business Administration with a concentration in Economics is to prepare candidates for a successful academic or professional career in economics and business. Through an intensive, advanced level training in both economic theory and quantitative methods, students learn to conduct independent research and prepare for various responsibilities of a professional career. The Economics Department has an outstanding faculty with a strong orientation in applied as well as theoretical research. For admission, program content, and financial aid information, see the departmental website at: [economics.memphis.edu/acad\\_index.html](http://economics.memphis.edu/acad_index.html)

## **Business Administration - Finance Concentration, (PhD)**

The required course work for the Ph.D. concentration in Finance includes corporate finance, investments, and market microstructure theory and applications. Market microstructure is the study of trading. The student body is comprised of promising scholars from across the U.S. and around the world.

Doctoral students are involved in all phases of faculty research, including co-authorship of research papers and presentations at professional meetings. The research tools and opportunities available to our doctoral students are impressive. Students use financial databases such as CRSP and COMPUSTAT and data on all trades and quotes, time to the microsecond or even nanosecond.

Research interests of the doctoral faculty in Finance include: capital market theory, futures prices, capital budgeting and dividend policy, interest rates, international stock market returns, corporate debt policy, and domestic versus multinational risk and return. The faculty has a special focus on market microstructure.

The doctoral finance faculty have published in leading scholarly journals, including: *Journal of Finance*, *Journal of Financial Economics*, *Journal of Financial and Quantitative Analysis*, *Review of Economics and Statistics*, *Journal of Financial Markets*, *Journal of Financial Research*, *Financial Review*, *Journal of Futures Markets*, *Journal of Banking and Finance*, *Journal of Business Finance and Accounting*, *Journal of Portfolio Management*, *Financial Analysts Journal*, and *Management Science*.

The program is quantitative and the course work includes a number of courses in economics such as econometrics.

For admission, prerequisites, and program information, see the college website at: [www.memphis.edu/fcbephd/](http://www.memphis.edu/fcbephd/).

## **Business Administration - Management Concentration, (PhD)**

See the beginning of the College section for admission, prerequisite, and program requirements. Students are expected to be enrolled in the program on a full-time basis during their course work and one year during their dissertation stage. Doctoral candidates must register for dissertation credit each academic semester until the dissertation is completed in order to remain in active status. This commitment is expected to require three to four years of full-time study. Course work should be completed within two to three years, depending upon a student's prior academic background.

In addition to these requirements, PhD students are expected to develop a high level of skills in both research and teaching. Doctoral students are provided ample opportunity to develop these skills through class work, seminars, and assistantships.

## **Business Administration - Management Information Systems, (PhD)**

The PhD program in MIS at the University of Memphis aims at preparing students for a successful academic career as scholars. The MIS department prides itself on maintaining a supportive research and teaching atmosphere. PhD students are encouraged to actively get involved in research with faculty right from the first semester. Our program nurtures students' innate curiosity while providing them with mentoring and support to train them for independent research and professional responsibilities.

MIS courses include topics such as information systems management, business database systems, systems analysis and design, business intelligence, data communications and networks, information assurance and data security. In research seminars students

review the core topics in information systems, with an emphasis on current research. Students also take four courses related to research methodology, as well as two courses related to research in the field of information systems.

MIS faculty publishes applied and theoretical research in the top tier MIS academic journals, focusing on the AIS-6 journals: *MIS Quarterly*, *Information Systems Research*, *Journal of BIT*, *Journal of the AIS*, *European Journal of Information Systems*, and *Information Systems Journal*. Our faculty's research spans multiple lines of inquiry including managerial, behavioral and technical topics and we employ empirical approaches, modeling, experimental, qualitative, design science and econometric methodologies.

Our PhD program in MIS benefits from a mix of junior faculty members complementing our existing strong cadre of senior faculty. This brings opportunity for the students to work in diverse research areas like information value, IS service quality, strategic information management, outsourcing and the use of open source, system testing and management, social networks, online consumer behavior, business value of IT, information assurance management, global IS issues, knowledge management, technology in the supply chain, healthcare IS, ethics and philosophy of IT, innovation & strategy, and IT leadership.

Our doctoral students actively participate in and benefit from the various initiatives the department is involved in such as weekly MIS research colloquium, the Systems Testing Excellence Program (STEP), and the Center for Innovation Technology Management.

For admission, prerequisites, and program information, see the college website at: <http://www.memphis.edu/fcbephd/>.

## **Business Administration - Marketing Concentration, (PhD)**

See the beginning of this College section for admission, prerequisites, and program requirements.

In addition to these requirements, the following are an integral part of expectations for students in the PhD program with a concentration in Marketing.

1. **Research:** Students are exposed to a variety of methodological courses designed to enhance their capability to design, implement and conduct research studies which address relevant marketing problems. Students are expected to complete their Ph.D. programs of study with some record of success in publishing their research efforts through conference papers and/or journal manuscripts.
2. **Teaching:** Developing teaching skills is a major component of the PhD program. In the course of the program, doctoral students are provided with a balanced teaching and research assistantship. Student evaluations as well as faculty input (by observing doctoral students teach) are used to assess teaching skills. If teaching skills are found inadequate, the PhD candidate will be advised an appropriate course of action.
3. **GPA Requirement:** Marketing doctoral students are required to maintain a minimum of 3.50 GPA in the marketing courses.

## **Chemistry, (PhD)**

### **PhD Degree Program**

Program objectives are: (1) competence in a common core of material in the major area of specialization; (2) proficiency in a minor area of specialization outside of the major; (3) development of expertise in experimental design, data analysis, and oral and written presentation of research results; (4) competitive for professional positions in the chemical sciences.

### **Program Admission**

See MS admission requirements.

## Program Requirements

### Diagnostic Examinations

Before registering for the first time, incoming graduate students will take a series of six standardized examinations, chosen from general, analytical, biochemistry, inorganic, organic, and physical chemistry. The examinations are at a level equivalent to completion of the following undergraduate courses at The University of Memphis: CHEM 4111 (inorganic), 4211 (analytical), 3310 and 3511 (organic), 4411 (physical), and 4512 (biochemistry). A doctoral candidate must make at least 50th percentile on four of the upper-level tests (analytical, biochemistry, inorganic, organic, and physical tests) or must take four of the equivalent classes (CHEM 6111, CHEM 6211, CHEM 6311, CHEM 6411, CHEM 6511). A candidate for the PhD degree must make at least 70th percentile on the general chemistry test to remain in the program. Students should note that a score of 75th percentile on the test or a "B" or better in the course is prerequisite to higher level graduate courses in each area.

- CHEM 6111 - Intermediate Inorganic CHEM Credit Hours: (3)
- CHEM 6211 - Instrumental Analysis Credit Hours: (3)
- CHEM 6311 - Intermediate Organic Chemistry Credit Hours: (3)
- CHEM 6411 - Advanced Physical Chemistry Credit Hours: (3)
- CHEM 6511 - Biochemistry I Credit Hours: (3)

### Course Work Requirements

The doctoral degree program includes the requirement of the satisfactory completion of a minimum of 72 semester hours of graduate credit beyond the BS degree. The 72-hour total is subject to the following restrictions:

#### No more than 12 hours

No more than 12 hours of credit at the 6000 level may be counted towards the doctoral degree. At least 12 hours must be in courses numbered CHEM 7100-7109-7899 (8100-8899; however, a maximum of 1 hour of Presentation (CHEM 7911) may be combined into this total), with at least two areas of chemistry represented.

#### A maximum of 32 hours

A maximum of 32 hours credit for CHEM 8001 - Directed Research and CHEM 9000 - Dissertation combined can be applied toward the 72-hour total.

- CHEM 8001 - Directed Research Credit Hours: (1-10)
- CHEM 9000 - Dissertation Credit Hours: (1-10)

#### A maximum of 12 hours

A maximum of 12 hours of CHEM 7910 - Spec Prob In Chem/CHEM 8910 - Spec Prob In Chem may be credited toward the total hour requirement.

- CHEM 7910 - Spec Prob In Chem Credit Hours: (1-12)
- CHEM 8910 - Spec Prob In Chem Credit Hours: (1-12)

#### A maximum of 12 hours

A maximum of 12 hours of course work may be included in a field related to chemistry (physical or biological sciences, mathematical sciences, or engineering). Courses taken in related areas must be numbered 6000 or above. However, these related courses cannot substitute for the more than six of the twelve hours of required CHEM 7/8000-level courses for the PhD Degree.

## Presentation

Presentation (CHEM 7911) and Advanced Presentation (CHEM 8911) are required. A maximum of 4 semester hours from some combination of CHEM 7911, CHEM 8911, and CHEM 7913/CHEM 8913 may be used to meet the 72 semester-hour requirement.

- CHEM 7911 - Presentation **Credit Hours: (1)**
- CHEM 8911 - Advanced Presentation **Credit Hours: (1)**
- CHEM 7913 - Chemistry Seminar **Credit Hours: (1)**
- CHEM 8913 - Chemistry Seminar **Credit Hours: (1)**

## A maximum of 30 hours

A maximum of 30 hours of graduate course credit completed at the University or other accredited institution (including credit applied on an MS degree) may be applied to the 72-hour requirement subject to the approval of the student's Advisory Committee and the Department's Graduate Studies Committee. Considering all other requirements are met, a minimum of 9 hours in graduate courses other than CHEM 7910/CHEM 8910, CHEM 7911/CHEM 8911, CHEM 7913/CHEM 8913, and CHEM 8001/CHEM 9000 must be completed at the university.

- CHEM 7910 - Spec Prob In Chem **Credit Hours: (1-12)**
- CHEM 8910 - Spec Prob In Chem **Credit Hours: (1-12)**
- CHEM 7911 - Presentation **Credit Hours: (1)**
- CHEM 8911 - Advanced Presentation **Credit Hours: (1)**
- CHEM 7913 - Chemistry Seminar **Credit Hours: (1)**
- CHEM 8913 - Chemistry Seminar **Credit Hours: (1)**
- CHEM 8001 - Directed Research **Credit Hours: (1-10)**
- CHEM 9000 - Dissertation **Credit Hours: (1-10)**

## Residence

Of the total semester-hour requirement, a minimum of 24 hours must be earned while the student is at The University of Memphis. This requirement cannot be met wholly by attendance at Summer Sessions and must include at least one academic year of full-time student status.

## Comprehensive Examinations

The student must begin the written part of the comprehensive examinations in the third semester and take up to eight consecutive tests. These are described in the summary of the administration of the graduate program. A student pursuing the doctoral degree must obtain a total of at least twelve points. Any student who has not amassed twelve points at the completion of eight tests is automatically terminated from the doctoral degree program. Written permission from the student's Advisory Committee is required to delay beginning the tests or to delay continuing once the student has begun taking tests. Within one year of obtaining the required twelve points, students should complete the oral part of the comprehensive examinations. The student will prepare a Research Prospectus on his or her thesis research problem, to be presented orally to the Advisory Committee in an open meeting and in a written form to the Advisory Committee and the Graduate Studies Committee. The oral comprehensive examination can

be repeated only once. A student who changes major professors must present a new Research Prospectus within one semester after the change is made.

## Students who enter the PhD program and already hold the MS degree

Students who enter the PhD program and already hold the MS degree in chemistry should begin taking the cumulative examinations at the first opportunity after initial enrollment if a satisfactory score is made on the diagnostic examinations.

## Seminar

Participation in Seminar is required during each semester of residence (excluding summer terms).

## The Advisory Committee

Upon admission to the Graduate School, the student will be advised by the Department's Graduate Studies Committee. A student must choose a major professor from the graduate faculty before the end of the first semester following enrollment. The major professor, in consultation with the student, will recommend faculty members to be appointed to the student's Advisory Committee. This committee, which is appointed after the student's First Year Conference, must be composed of at least five members, with the major professor serving as chair. Of the members of this committee, at least one is to be from a different area of specialization from that in which the student intends to work. Upon appointment, the committee will review the student's progress to date and outline an appropriate program tailored to the student's interests to enable fulfillment of the degree requirements. The student will be regularly evaluated by their Advisor and Advisory Committee. In the unlikely event that a student changes major professors, a new Advisory Committee must be appointed.

## Admission to Candidacy

In order to apply for candidacy, the student must have an Advisory Committee and must have successfully completed the departmental comprehensive examination requirement. The written and oral portions of the comprehensive examinations (the oral exam replaces the research prospectus) collectively satisfy the comprehensive examination requirement of the Graduate School. The test scores, transcripts, and other pertinent data will be examined by the student's Advisory Committee, and their recommendation, with the approval of the Graduate Studies Committee and the Department Chair, will be forwarded to the Graduate School.

## Doctoral Research and Dissertation

A minimum of six hours of CHEM 9000 is required for the doctoral degree. Registration for nine semester hours of CHEM 9000 and CHEM 8001 combined is required of all doctoral candidates before the dissertation will be considered. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

## Final Examination

The student's Advisory Committee will administer a final oral examination on the student's dissertation and related material after completion of all course requirements and the dissertation. This examination will be held two weeks or more after the student has distributed copies of the dissertation to the members of the Advisory Committee; which must be done at least five weeks before the end of the semester in which the student expects to graduate. If the final oral examination is unsatisfactory, it must be repeated within one year. It may not be repeated more than once.

## Retention

A student pursuing the doctoral degree program may be terminated for any of the following reasons:

1. Failure to maintain a grade point average of 3.0 or above. A student who has a cumulative grade point average below 3.0 will be placed on probation. The Assistant Vice Provost for Graduate Studies must approve continuation in graduate school. Any person whose continuation is denied may appeal the decision to the University Council for Graduate Studies.
2. Accumulation of more than six hours of graduate credit with grades of C or below.
3. Failure to accumulate the requisite number of points on the departmental comprehensive examinations. (See Comprehensive Examinations Section).
4. Failure to make satisfactory progress towards the degree in a timely fashion, as determined by the Departmental Program Retention Committee.
5. Failure to satisfy the Advisory Committee on the final oral examination. (See Final Examination Section).

## **Communication Sciences and Disorders - Hearing Sciences and Disorders Concentration, (PhD)**

### **PhD Program**

#### **Program Admission**

1. All completed applications are reviewed by the admissions committee. Students should have a GPA of at least 3.0 (on a 4 point scale). GRE scores are required (General Test). Applications will be accepted throughout the year for the PhD program. However, applications submitted by February 1st of each year will be considered for funding. Decisions about financial assistance are typically made each year shortly after the February 1 deadline. Decisions about financial assistance through research grants, however, can be made for applications received at any time.
2. Applicants should submit recommendations from at least three individuals familiar with the applicant's academic background and aptitude for PhD work in Audiology or Speech-Language Pathology. The letters should specify in detail the applicant's capabilities for PhD study.
3. Applicants also need to submit a resume/vita describing all educational and work experience and a letter describing research interests and professional goals.
4. In addition, applicants must have an interview with U of M faculty in the student's major area of concentration.
5. Most applicants will have a master's degree upon admission but this is not a requirement. Students can be admitted directly from the bachelor's degree.
6. Students are expected to understand and use English proficiently.

#### **Graduation Requirements**

1. For students entering with a bachelor's degree, a minimum of 81 graduate hours, not including dissertation, is required for the PhD degree in Communication Sciences and Disorders.
2. For students who have completed a master's degree in Audiology or Speech-Language Pathology, a minimum of 57 graduate hours, not including dissertation, will be required for the PhD degree.
3. For students who have completed a master's degree in a field related to Audiology or Speech-Language Pathology, a minimum of 69 graduate hours, not including dissertation, will be required for the PhD degree.
4. For students who have completed an AuD degree, a minimum of 33 hours, not including dissertation, will be required for the PhD degree.
5. A minimum of 9 hours is required for the dissertation. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write the dissertation.
6. Additional coursework, beyond the minimum, may be required at the discretion of the advising committee. Course credit for clinical practicum may not be counted toward the PhD degree.

## Areas of Concentration:

Three areas of concentration are offered: (1) Hearing Sciences and Disorders, (2) Speech-Language Sciences and Disorders, and (3) Neuroscience. A minimum of 24 credit hours must be taken in the student's area of concentration and at least 21 of these hours must be within the School of Communication Sciences and Disorders. This requirement is waived for post-AuD students in the Audiology concentration.

## Core Requirements

*Core Requirements are designed to ensure that all PhD students will acquire knowledge of the acoustic phonetic structure of speech signals, speech acoustics, professional issues, and the neuroanatomy/neurophysiology related to communication sciences and disorders:* All PhD students are required to complete the following:

- AUSP 8008 - Acoustic/Percept Phonetics **Credit Hours: (3)**
- AUSP 8021 - Prof Prep/Scientists **Credit Hours: (1)** (minimum 3 credit hours)
- AUSP 8400 - Teaching Experience **Credit Hours: (1-3)** (Min 1 credit hour of mentored teaching)
  
- AUSP 8010 - Neurol Bases Comm **Credit Hours: (2)**  
or
- AUSP 8020 - Auditory Processing Across the Lifespan **Credit Hours: (3)**

## Research tools

- Research Tool—15 credit hours, of which 9 hours must be in statistics and/or research design.

## Collateral Area:

A minimum of 9 semester hours will be required from a collateral area. A collateral area is defined as a combination of courses based on substantive commonality. This collateral coursework must be taken outside the School of Communication Sciences and Disorders. The collateral area requirement can be waived for a student entering with a master's degree in a field related to Audiology or Speech-Language Pathology or if the student's outside work is considered sufficient by the Planning Committee.

## Pre-Candidacy Research Project:

All PhD students will be required to satisfactorily complete a data-based research project prior to candidacy. Students will submit an approved written version of the completed project to the academic advisor and orally present the completed project to a departmental colloquium.

## Additional Requirements

1. All PhD students are expected to be active in research collaboratively with members of the School faculty each semester they are enrolled.
2. Students may be permitted to complete the requirements for clinical certification with the approval of their planning committee.

## General Program Requirements



## Advisors:

Upon admission each student will be assigned an advisor by the Associate Dean of Graduate Studies in consultation with the student. This advisor will serve as the chair of the student's planning committee. The advisor shall be a full member of the graduate faculty of The University of Memphis.

## Planning Committee:

The planning committee's charge is to evaluate the student's academic needs and assist in the planning of the student's academic program. Students who have completed a master's or AuD degree will be assessed for currency of knowledge in their concentration to assist in the planning of their academic program. This requirement will not apply to those students who have completed a master's or AuD degree within the School of Communication Sciences and Disorders. The academic program will be tailored to accommodate the individual student's academic interests, background, and professional goals. Within the concentration area, each student will identify an area of special focus. The committee will recommend to the Graduate School those courses, if any, to be transferred toward the PhD, provided that the credit meets general university requirements. The committee, all of whom must be members of the graduate faculty, shall number no less than three, at least two of whom shall be from the student's area of concentration. The student, in conjunction with the committee, will develop a final academic plan to be in written form and filed in the dean's office. This plan is to be signed by each member of the committee and the PhD student. The plan must be filed no later than the middle of the second semester. The student or a planning committee member may propose changes after the plan has been filed. However, any resulting change in the student's plan will require written approval of the committee and the PhD student.

## Retention Requirements

All students enrolled in the School of Communication Sciences and Disorders are expected to attain high academic achievement in all courses taken. In addition to Graduate School policy the criteria listed below will be used to determine the retention status of students enrolled in the School.

1. Continuation in the program is contingent upon a satisfactory annual review.
2. Grades of less than 2.00 in a required course are considered unacceptable and must be repeated in order to meet graduation requirements.
3. Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment in all coursework at the University of Memphis. Any student not meeting these conditions will be placed on academic probation by the School.
4. Any student who is placed on academic probation for a third time during his/her academic program will be dismissed before enrolling in another semester.
5. Students have the option of repeating two courses in which a grade of 2.00 or less was earned. After exhausting this option, students are permitted to count only two grades of 2.00 toward graduation. A student will be dismissed at the end of the semester in which a third grade of 2.00 or less is earned.
6. Students must pass the comprehensive examination (including both written and oral components).

## Comprehensive Examination Committee

The comprehensive examination committee will consist of members selected by the student in conjunction with the advisor and the planning committee. The committee will be made up of at least three members from the School of Communication Sciences and Disorders and one from an academic unit outside the School of Communication Sciences and Disorders.

## Comprehensive Examination

The purpose of the comprehensive examination is to determine mastery and broad understanding of the theoretical and empirical issues in contemporary speech-hearing sciences. This includes knowledge of the field, research tools, and of a collateral area.

Examiners will evaluate the student's ability to synthesize, integrate, and critique information and ideas. Although there will usually be a close relationship between doctoral coursework and the comprehensive examination, the examination is not restricted to course content. The comprehensive examination will consist of written and oral components selected by the Comprehensive Examination Committee in consultation with the student to represent areas of particular importance for the student's career.

**Written Examination:** The written examination entails 24 hours of evaluation. A minimum of 9 hours of written answers to questions that test core knowledge in the selected areas of study must be completed within a 10-day period. Up to 15 hours may be completed in an alternative manner (e.g., practical laboratory examination/experiment, scholarly paper(s), grant proposal, course development). All activities that count toward the written portion must be approved by the Comprehensive Examination Committee and should be concluded either during the last semester of completing academic requirements or shortly thereafter. This examination will be administered any time within the specified semester subject to the discretion of the Committee.

**Oral Examination:** The oral examination shall be administered within three weeks of the conclusion of the written examination regardless of the student's performance on the written examination. The oral examination is a supplement to the written examination and is intended to ensure that the goals of the comprehensive examination have been met.

All Comprehensive Examination Committee members from within the School and at least one from outside the School must be present at the oral examination. The committee shall determine the student's status relative to the comprehensive examination after the oral examination. No more than one dissenting vote may be cast for a student to pass. The committee has the authority to specify further stipulations aimed at remedying any deficiencies reflected in the student's comprehensive examination including enrolling for additional coursework, preparing one or more scholarly papers, or retaking the entire written and oral examination. The comprehensive exam may be retaken only once. However, in the case that a student fails by unanimous vote by all committee members, he/she will not be eligible to retake the comprehensive exams and will be dismissed from the program. The committee chair shall file in the dean's office a decision in writing concerning the student's comprehensive examination within two weeks after the oral examination.

## Candidacy

After completion of all academic requirements and successful completion of the comprehensive examination, a PhD student may apply for candidacy.

## Dissertation Committee

The dissertation committee will consist of a minimum of four faculty members selected by the student in consultation with the dissertation advisor. At least half of the members must be from the School and at least one member must be from a department outside the School of Communication Sciences and Disorders. The chairperson of the dissertation committee must be from the School and must be a full member of the graduate faculty.

## Dissertation

The student will develop a prospectus in conjunction with the dissertation committee chairperson. The prospectus will be reviewed for approval by the committee. After approval the student will conduct the work set forth in the prospectus. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write. The completed dissertation will be defended by the student. The oral defense will be open to the University community, with voting on the acceptability of the defense restricted to dissertation committee members. All members of the committee must be present at the dissertation defense. An affirmative decision will be based on the unanimous decision of the examining committee. After successful defense, any required revision, retyping, and resubmission of the dissertation to the committee chair must be completed prior to awarding of the degree.

## Completion of both Research (PhD) and Professional (MA or AuD) Programs

Students applying to the PhD program may also wish to meet the academic and practicum requirements for a professional degree in either Speech-Language Pathology or Audiology. PhD applicants may request consideration of a combined degree plan in consultation with prospective mentors. PhD admission requirements must be met as stated above. Combined degree plans require approval by the PhD admissions committee as well as the clinical admissions committee. For MA-PhD students, all degree requirements for both programs remain in effect as specified in the Graduate Catalog for each degree, and for AuD-PhD students, all degree requirements for both programs remain in effect as specified in the Graduate Catalog for each degree program.

## **Communication Sciences and Disorders - Neuroscience, (PhD)**

### **PhD Program**

#### **Program Admission**

1. All completed applications are reviewed by the admissions committee. Students should have a GPA of at least 3.0 (on a 4 point scale). GRE scores are required (General Test). Applications will be accepted throughout the year for the PhD program. However, applications submitted by February 1st of each year will be considered for funding. Decisions about financial assistance are typically made each year shortly after the February 1 deadline. Decisions about financial assistance through research grants, however, can be made for applications received at any time.
2. Applicants should submit recommendations from at least three individuals familiar with the applicant's academic background and aptitude for PhD work in Audiology or Speech-Language Pathology. The letters should specify in detail the applicant's capabilities for PhD study.
3. Applicants also need to submit a resume/vita describing all educational and work experience and a letter describing research interests and professional goals.
4. In addition, applicants must have an interview with U of M faculty in the student's major area of concentration.
5. Most applicants will have a master's degree upon admission but this is not a requirement. Students can be admitted directly from the bachelor's degree.
6. Students are expected to understand and use English proficiently.

#### **Graduation Requirements**

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#### **Areas of Concentration:**

Three areas of concentration are offered: (1) Hearing Sciences and Disorders, (2) Speech-Language Sciences and Disorders, and (3) Neuroscience. A minimum of 24 credit hours must be taken in the student's area of concentration and at least 21 of these hours must be within the School of Communication Sciences and Disorders. This requirement is waived for post-AuD students in the Audiology concentration.

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- Research Tool—15 credit hours, of which 9 hours must be in statistics and/or research design.

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3. Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment in all coursework at the University of Memphis. Any student not meeting these conditions will be placed on academic probation by the School.
4. Any student who is placed on academic probation for a third time during his/her academic program will be dismissed before enrolling in another semester.
5. Students have the option of repeating two courses in which a grade of 2.00 or less was earned. After exhausting this option, students are permitted to count only two grades of 2.00 toward graduation. A student will be dismissed at the end of the semester in which a third grade of 2.00 or less is earned.
6. Students must pass the comprehensive examination (including both written and oral components).

## Comprehensive Examination Committee

The comprehensive examination committee will consist of members selected by the student in conjunction with the advisor and the planning committee. The committee will be made up of at least three members from the School of Communication Sciences and Disorders and one from an academic unit outside the School of Communication Sciences and Disorders.

## Comprehensive Examination

The purpose of the comprehensive examination is to determine mastery and broad understanding of the theoretical and empirical issues in contemporary speech-hearing sciences. This includes knowledge of the field, research tools, and of a collateral area. Examiners will evaluate the student's ability to synthesize, integrate, and critique information and ideas. Although there will usually be a close relationship between doctoral coursework and the comprehensive examination, the examination is not restricted to course content. The comprehensive examination will consist of written and oral components selected by the Comprehensive Examination Committee in consultation with the student to represent areas of particular importance for the student's career.

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course development). All activities that count toward the written portion must be approved by the Comprehensive Examination Committee and should be concluded either during the last semester of completing academic requirements or shortly thereafter. This examination will be administered any time within the specified semester subject to the discretion of the Committee.

**Oral Examination:** The oral examination shall be administered within three weeks of the conclusion of the written examination regardless of the student's performance on the written examination. The oral examination is a supplement to the written examination and is intended to ensure that the goals of the comprehensive examination have been met.

All Comprehensive Examination Committee members from within the School and at least one from outside the School must be present at the oral examination. The committee shall determine the student's status relative to the comprehensive examination after the oral examination. No more than one dissenting vote may be cast for a student to pass. The committee has the authority to specify further stipulations aimed at remedying any deficiencies reflected in the student's comprehensive examination including enrolling for additional coursework, preparing one or more scholarly papers, or retaking the entire written and oral examination. The comprehensive exam may be retaken only once. However, in the case that a student fails by unanimous vote by all committee members, he/she will not be eligible to retake the comprehensive exams and will be dismissed from the program. The committee chair shall file in the dean's office a decision in writing concerning the student's comprehensive examination within two weeks after the oral examination.

## Candidacy

After completion of all academic requirements and successful completion of the comprehensive examination, a PhD student may apply for candidacy.

## Dissertation Committee

The dissertation committee will consist of a minimum of four faculty members selected by the student in consultation with the dissertation advisor. At least half of the members must be from the School and at least one member must be from a department outside the School of Communication Sciences and Disorders. The chairperson of the dissertation committee must be from the School and must be a full member of the graduate faculty.

## Dissertation

The student will develop a prospectus in conjunction with the dissertation committee chairperson. The prospectus will be reviewed for approval by the committee. After approval the student will conduct the work set forth in the prospectus. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write. The completed dissertation will be defended by the student. The oral defense will be open to the University community, with voting on the acceptability of the defense restricted to dissertation committee members. All members of the committee must be present at the dissertation defense. An affirmative decision will be based on the unanimous decision of the examining committee. After successful defense, any required revision, retyping, and resubmission of the dissertation to the committee chair must be completed prior to awarding of the degree.

## Completion of both Research (PhD) and Professional (MA or AuD) Programs

Students applying to the PhD program may also wish to meet the academic and practicum requirements for a professional degree in either Speech-Language Pathology or Audiology. PhD applicants may request consideration of a combined degree plan in consultation with prospective mentors. PhD admission requirements must be met as stated above. Combined degree plans require approval by the PhD admissions committee as well as the clinical admissions committee. For MA-PhD students, all degree requirements for both programs remain in effect as specified in the Graduate Catalog for each degree, and for AuD-PhD students, all degree requirements for both programs remain in effect as specified in the Graduate Catalog for each degree program.

## Neuroscience Concentration

## CSD Neuro Courses

- A USP 8000 - Speech Science Credit Hours: (3)
- A USP 8001 - Psychoacoustics Credit Hours: (3)
- A USP 8010 - Neurol Bases Comm Credit Hours: (2)
- A USP 8011 - Psycholinguistics Credit Hours: (3)
- A USP 8019 - Anat/Phys Aud Sys Credit Hours: (3)
- A USP 8020 - Auditory Processing Across the Lifespan Credit Hours: (3)
- A USP 8105 - Vestibular Assmt/Rehab Credit Hours: (3)
- A USP 8118 - Electrophys Assessmnt Credit Hours: (3)
- A USP 8212 - Autism Spect Disord/Rel Disabl Credit Hours: (3)
- A USP 8112 - Sem Audiology Credit Hours: (3)

## Other Units

- BIOM 6720 - Bioelectricity Credit Hours: (4)
- PSYC 827 - Functional Neuroanatomy (UTHSC)
- ANT 821 - Neuroscience Seminar (UTHSC)
- BIOL 8140 - Receptors & Signaling Credit Hours: (3)
- BIOL 8338 - Biological Clocks Credit Hours: (3)
- BIOL 8345 - Animal Communication Credit Hours: (3)
- BIOL 8350 - Evolutionary Ecology Credit Hours: (3)
- BIOL 8031 - Cell Physiology Credit Hours: (3)

## PHD Experimental Psychology-Behavioral Neuroscience Concentration Requirements

### Biological Bases of Behavior:

- PSYC 8701 - Behavioral Neuroscience Credit Hours: (3)
- PSYC 8705 - Neuropsychopharmacology Credit Hours: (3)
- PSYC 8441 - Psyc/Medical Illness Credit Hours: (3)

### Cognitive-Affective Bases of Behavior:

- PSYC 8407 - Cognition & Emotion Credit Hours: (3)
- PSYC 8222 - Psychology Human Memory Credit Hours: (3)
- PSYC 8208 - Psyc Of Perception Credit Hours: (3)
- PSYC 8211 - Cognitive Processes Credit Hours: (3)

## **Communication Sciences and Disorders - Speech-Language Sciences and Disorders Concentration, (PhD)**

## PhD Program

### Program Admission

1. All completed applications are reviewed by the admissions committee. Students should have a GPA of at least 3.0 (on a 4 point scale). GRE scores are required (General Test). Applications will be accepted throughout the year for the PhD program. However, applications submitted by February 1st of each year will be considered for funding. Decisions about financial assistance are typically made each year shortly after the February 1 deadline. Decisions about financial assistance through research grants, however, can be made for applications received at any time.
2. Applicants should submit recommendations from at least three individuals familiar with the applicant's academic background and aptitude for PhD work in Audiology or Speech-Language Pathology. The letters should specify in detail the applicant's capabilities for PhD study.
3. Applicants also need to submit a resume/vita describing all educational and work experience and a letter describing research interests and professional goals.
4. In addition, applicants must have an interview with U of M faculty in the student's major area of concentration.
5. Most applicants will have a master's degree upon admission but this is not a requirement. Students can be admitted directly from the bachelor's degree.
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### Graduation Requirements

1. For students entering with a bachelor's degree, a minimum of 81 graduate hours, not including dissertation, is required for the PhD degree in Communication Sciences and Disorders.
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3. For students who have completed a master's degree in a field related to Audiology or Speech-Language Pathology, a minimum of 69 graduate hours, not including dissertation, will be required for the PhD degree.
4. For students who have completed an AuD degree, a minimum of 33 hours, not including dissertation, will be required for the PhD degree.
5. A minimum of 9 hours is required for the dissertation. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write the dissertation.
6. Additional coursework, beyond the minimum, may be required at the discretion of the advising committee. Course credit for clinical practicum may not be counted toward the PhD degree.

### Areas of Concentration:

Three areas of concentration are offered: (1) Hearing Sciences and Disorders, (2) Speech-Language Sciences and Disorders, and (3) Neuroscience. A minimum of 24 credit hours must be taken in the student's area of concentration and at least 21 of these hours must be within the School of Communication Sciences and Disorders. This requirement is waived for post-AuD students in the Audiology concentration.

### Core Requirements

*Core Requirements are designed to ensure that all PhD students will acquire knowledge of the acoustic phonetic structure of speech signals, speech acoustics, professional issues, and the neuroanatomy/neurophysiology related to communication sciences and disorders:* All PhD students are required to complete the following:

- AUSP 8008 - Acoustic/Percept Phonetics **Credit Hours: (3)**
- AUSP 8021 - Prof Prep/Scientists **Credit Hours: (1)** (minimum 3 credit hours)
- AUSP 8400 - Teaching Experience **Credit Hours: (1-3)** (Min 1 credit hour of mentored teaching)



- AUSP 8010 - Neurol Bases Comm **Credit Hours: (2)**  
or
- AUSP 8020 - Auditory Processing Across the Lifespan **Credit Hours: (3)**

### Research tools

- Research Tool—15 credit hours, of which 9 hours must be in statistics and/or research design.

### Collateral Area:

A minimum of 9 semester hours will be required from a collateral area. A collateral area is defined as a combination of courses based on substantive commonality. This collateral coursework must be taken outside the School of Communication Sciences and Disorders. The collateral area requirement can be waived for a student entering with a master's degree in a field related to Audiology or Speech-Language Pathology or if the student's outside work is considered sufficient by the Planning Committee.

### Pre-Candidacy Research Project:

All PhD students will be required to satisfactorily complete a data-based research project prior to candidacy. Students will submit an approved written version of the completed project to the academic advisor and orally present the completed project to a departmental colloquium.

### Additional Requirements

1. All PhD students are expected to be active in research collaboratively with members of the School faculty each semester they are enrolled.
2. Students may be permitted to complete the requirements for clinical certification with the approval of their planning committee.

### General Program Requirements

#### Advisors:

Upon admission each student will be assigned an advisor by the Associate Dean of Graduate Studies in consultation with the student. This advisor will serve as the chair of the student's planning committee. The advisor shall be a full member of the graduate faculty of The University of Memphis.

#### Planning Committee:

The planning committee's charge is to evaluate the student's academic needs and assist in the planning of the student's academic program. Students who have completed a master's or AuD degree will be assessed for currency of knowledge in their concentration to assist in the planning of their academic program. This requirement will not apply to those students who have completed a master's or AuD degree within the School of Communication Sciences and Disorders. The academic program will be tailored to accommodate the individual student's academic interests, background, and professional goals. Within the concentration area, each student will identify an area of special focus. The committee will recommend to the Graduate School those courses, if any, to be transferred toward the PhD, provided that the credit meets general university requirements. The committee, all of whom must be members of the graduate faculty, shall number no less than three, at least two of whom shall be from the student's area of concentration. The student, in conjunction with the committee, will develop a final academic plan to be

in written form and filed in the dean's office. This plan is to be signed by each member of the committee and the PhD student. The plan must be filed no later than the middle of the second semester. The student or a planning committee member may propose changes after the plan has been filed. However, any resulting change in the student's plan will require written approval of the committee and the PhD student.

## Retention Requirements

All students enrolled in the School of Communication Sciences and Disorders are expected to attain high academic achievement in all courses taken. In addition to Graduate School policy the criteria listed below will be used to determine the retention status of students enrolled in the School.

1. Continuation in the program is contingent upon a satisfactory annual review.
2. Grades of less than 2.00 in a required course are considered unacceptable and must be repeated in order to meet graduation requirements.
3. Students must maintain a cumulative grade point average of 3.00 at the end of each semester of enrollment in all coursework at the University of Memphis. Any student not meeting these conditions will be placed on academic probation by the School.
4. Any student who is placed on academic probation for a third time during his/her academic program will be dismissed before enrolling in another semester.
5. Students have the option of repeating two courses in which a grade of 2.00 or less was earned. After exhausting this option, students are permitted to count only two grades of 2.00 toward graduation. A student will be dismissed at the end of the semester in which a third grade of 2.00 or less is earned.
6. Students must pass the comprehensive examination (including both written and oral components).

## Comprehensive Examination Committee

The comprehensive examination committee will consist of members selected by the student in conjunction with the advisor and the planning committee. The committee will be made up of at least three members from the School of Communication Sciences and Disorders and one from an academic unit outside the School of Communication Sciences and Disorders.

## Comprehensive Examination

The purpose of the comprehensive examination is to determine mastery and broad understanding of the theoretical and empirical issues in contemporary speech-hearing sciences. This includes knowledge of the field, research tools, and of a collateral area. Examiners will evaluate the student's ability to synthesize, integrate, and critique information and ideas. Although there will usually be a close relationship between doctoral coursework and the comprehensive examination, the examination is not restricted to course content. The comprehensive examination will consist of written and oral components selected by the Comprehensive Examination Committee in consultation with the student to represent areas of particular importance for the student's career.

**Written Examination:** The written examination entails 24 hours of evaluation. A minimum of 9 hours of written answers to questions that test core knowledge in the selected areas of study must be completed within a 10-day period. Up to 15 hours may be completed in an alternative manner (e.g., practical laboratory examination/experiment, scholarly paper(s), grant proposal, course development). All activities that count toward the written portion must be approved by the Comprehensive Examination Committee and should be concluded either during the last semester of completing academic requirements or shortly thereafter. This examination will be administered any time within the specified semester subject to the discretion of the Committee.

**Oral Examination:** The oral examination shall be administered within three weeks of the conclusion of the written examination regardless of the student's performance on the written examination. The oral examination is a supplement to the written examination and is intended to ensure that the goals of the comprehensive examination have been met.

All Comprehensive Examination Committee members from within the School and at least one from outside the School must be present at the oral examination. The committee shall determine the student's status relative to the comprehensive examination after the oral examination. No more than one dissenting vote may be cast for a student to pass. The committee has the authority to specify further stipulations aimed at remedying any deficiencies reflected in the student's comprehensive examination including enrolling for additional coursework, preparing one or more scholarly papers, or retaking the entire written and oral examination. The comprehensive exam may be retaken only once. However, in the case that a student fails by unanimous vote by all committee members, he/she will not be eligible to retake the comprehensive exams and will be dismissed from the program. The committee chair shall file in the dean's office a decision in writing concerning the student's comprehensive examination within two weeks after the oral examination.

## Candidacy

After completion of all academic requirements and successful completion of the comprehensive examination, a PhD student may apply for candidacy.

## Dissertation Committee

The dissertation committee will consist of a minimum of four faculty members selected by the student in consultation with the dissertation advisor. At least half of the members must be from the School and at least one member must be from a department outside the School of Communication Sciences and Disorders. The chairperson of the dissertation committee must be from the School and must be a full member of the graduate faculty.

## Dissertation

The student will develop a prospectus in conjunction with the dissertation committee chairperson. The prospectus will be reviewed for approval by the committee. After approval the student will conduct the work set forth in the prospectus. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write. The completed dissertation will be defended by the student. The oral defense will be open to the University community, with voting on the acceptability of the defense restricted to dissertation committee members. All members of the committee must be present at the dissertation defense. An affirmative decision will be based on the unanimous decision of the examining committee. After successful defense, any required revision, retyping, and resubmission of the dissertation to the committee chair must be completed prior to awarding of the degree.

## Completion of both Research (PhD) and Professional (MA or AuD) Programs

Students applying to the PhD program may also wish to meet the academic and practicum requirements for a professional degree in either Speech-Language Pathology or Audiology. PhD applicants may request consideration of a combined degree plan in consultation with prospective mentors. PhD admission requirements must be met as stated above. Combined degree plans require approval by the PhD admissions committee as well as the clinical admissions committee. For MA-PhD students, all degree requirements for both programs remain in effect as specified in the Graduate Catalog for each degree, and for AuD-PhD students, all degree requirements for both programs remain in effect as specified in the Graduate Catalog for each degree program.

## Communication, (PhD)

### PhD Program

The PhD program offers various areas of specialization:

For details on these areas see the Department of Communication website.

All graduate students must comply with the general requirements of the Graduate School (see Admission Regulations, Academic Regulations, and Minimum Degree Requirements) as well as the program requirements of the degree being pursued.

## Admissions Criteria

Students can be admitted to the PhD program with or without a Master's degree. We require your degree to be in Communication, Rhetoric, or a related field from an accredited institution. Multiple criteria will be used when considering your application for admission, including, but not limited to, undergraduate and graduate grade point average, statement of purpose, writing samples, relevant employment history, letters of recommendation, and the quality of the applicant's writing. The number of students admitted to the PhD program will depend on availability of adequate faculty supervision and other department resources. More specific admissions criteria can be found on our department website.

See the Department of Communication website for information on applying.

## Graduate Advising

Before registering for courses beyond 18 hours of study in the department, the student must choose a major advisor and form a PhD advisory program committee consisting of their major advisor to serve as chair and two members of the department's graduate faculty. Students must also submit a Plan of Study, approved by their committee, before registering for courses beyond 18 hours.

## Role of the PhD Advisory Committee

All decisions pertaining to a student's program must be approved by a consensus of the PhD advisory committee, including meeting to approve a plan of study and approving the content of independent studies. Changes to the plan of study require advisory committee approval. See information below on comprehensive exams and dissertation for more information on the role of the advisory committee.

## Program Requirements

1. It is expected that students maintain a GPA of 3.0 throughout the PhD program. Should the student's GPA fall below 3.0, nine semester hours will be allowed to correct the deficiency. At the request of the student's PhD advisory committee and at the discretion of the department chair and the graduate committee, this period may be extended 9 additional semester hours. The student must have obtained a GPA of at least 3.0 before registering for dissertation credit hours. Any assistantship is forfeited if a student is put on probation.
2. A minimum of 72 hours of graduate credit beyond the bachelor's degree. At least 60 hours of credit must be at the 7000 level or higher. Students admitted to the PhD program without an MA must first complete the MA in Communication as part of their PhD requirements. For students who have already obtained a master's degree when admitted to the program, a minimum of 42 hours of graduate credit at the 7000 level or higher beyond that master's degree is required. A minimum of 6 hours must be taken from outside of the Department of Communication. No more than 6 hours of dissertation (COMM 9000) will count toward satisfying the total number of graduate hours required for the PhD.
3. Students are required to take COMM 8017 - Introduction to Graduate Studies in Communication and COMM 8321 - Communication Theory. Students are required to take at least 6 hours of methods courses (3 hours must be taken in the department). Department courses designated as methods are listed on the department's website. Substitutions are allowed with the committee's approval.
4. Research Tool or Analytic Specialty. Students must demonstrate competence in the research tool or analytic specialty required for completion of their dissertation. Competence can be demonstrated in a variety of ways to be determined by the student's advisory committee.
5. Core Competencies. Students must have competency in the Department's areas of specialization. These competencies can be satisfied academically in a variety of ways in consultation with the student's advisor.

6. **Residency Requirements.** A minimum of 2 consecutive semesters (Fall/Spring or Spring/Fall) in residence (with a course load of 9 hours per semester) beyond the master's degree must be completed prior to registering for dissertation credit. The summer session will not count as one of the required semesters.
7. **Comprehensive Examination.** The examination will consist of a written and an oral portion. At the completion of the students' course-work the student shall take a comprehensive exam over the areas covered in the student's program. The content of the examination for each student will depend on the nature of the student's program and the areas of concentration. The precise distribution of the 10 hours of the written exam and the areas that it will cover will be determined by the student's PhD advisory committee. When appropriate, questions may be solicited from other faculty members to supplement those provided by the PhD advisory committee members. The comprehensive examination, which is both written and oral, is the primary basis on which the faculty of the department determine whether the student is ready to embark upon the program of research and writing culminating in the dissertation. The PhD advisory committee administers the comprehensive examination. At the close of the oral portion, the PhD advisory committee, after considering the quality of both oral and written responses, will determine the outcome. Students will not be allowed to take the comprehensive examination or submit a dissertation prospectus if they have any Incompletes outstanding in the approved program of study.
8. **Dissertation Requirements**
  1. On successful completion of the comprehensive examination the student shall select a dissertation director and, in consultation with the director, invite three additional faculty members to serve as the students' dissertation advisory committee. One member of the advisory committee must be from outside the discipline. The dissertation director serves as the chair of the dissertation committee. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.
  2. **Dissertation Proposal Defense.** The student shall submit a proposal for the dissertation to the dissertation advisory committee and defend the proposal before the committee. To be considered as "making satisfactory progress," a candidate must have his/her prospectus approved within two semesters of completion of the comprehensive examination.
  3. **Dissertation Defense:** Once the dissertation director deems a dissertation ready for defense, the director circulates a complete draft of the document to all committee members. "Ready for defense" means the director, in their judgement, believes that the document is satisfactory and defensible before the full committee. The committee will have at least ten (10) business days to review the document before rendering their judgement. Once the majority of the dissertation committee formally agrees that the dissertation is ready to be defended, then a defense date can be set. Upon approval of a majority of the members of the dissertation committee at the defense, the dissertation will then be submitted to the Graduate School for final approval.
9. **Departmental PhD Guidelines.** Additional details and information are available in the departmental PhD Guidelines found on the department website.

## Graduate Assistantships

1. Graduate assistantships are available and are awarded on a competitive basis within the department. Assistantships are normally renewed for one year depending upon the performance of assistantship duties and the progress being made toward a degree.
2. More details are available on the department website.

## Time Limit

All requirements for the degree must be completed in 12 calendar years.

## Maintaining Satisfactory Progress

At the end of every semester, the graduate faculty in the Department of Communication evaluates the progress of every PHD student in the program. During the review, the graduate faculty also evaluates the performance of GTA/GRA work. For those guidelines refer to the department's website.

For a student to continue in the program, they must maintain satisfactory progress. The student will be judged as NOT making satisfactory progress if:

1. The student's cumulative GPA (during the student's initial 36 hours of coursework in the COMM PhD program) drops below 3.0 and remains there for more than one (1) semester or nine (9) credit hours.
2. The student does not pass comprehensive exams within two (2) semesters of completing thirty-six (36) hours of coursework.
3. The student does not defend prospectus successfully within two (2) semesters of passing comprehensive examination.
4. The student has acquired more incompletes than they can complete during one semester of normal academic work.
5. The student's coursework does not demonstrate promise for independent scholarly work.

Should a student fail to maintain satisfactory progress, the Department Chair, in conjunction with the Graduate Director may begin a termination process as outlined in the graduate catalog (Academic Performance Termination and Appeal). Moreover, students found by the Office of Student Conduct to have committed misconduct will be sanctioned by the University in accordance with the policies contained in the "Code of Student Rights and Responsibilities." In these cases, the Department Chair, in conjunction with the Graduate Director, may also begin a termination process as outlined in the graduate catalog (Academic Performance Termination and Appeal.)

## Computer Science, (PhD)

Computer Science, (PhD)

### PhD Degree

### Program Admission and Requirements

The admission requirements for this program are as follows:

1. GRE scores.
2. Three letters of recommendation.
3. An undergraduate degree in an appropriate discipline with a minimum GPA of 2.5 (on a 4.0 scale) or equivalent preparation.
4. A score of at least 87 on TOEFL, 6.5 on IELTS, 59 on PTE, or 110 on Duolingo, for students from countries where English is not the primary language. Students with a lower score may still be admitted if their application is strong in other aspects.
5. A statement of purpose.

Additionally, students must satisfy the following prerequisites:

1. One year (8 credit hours) of calculus and one semester (3 credit hours) of linear algebra.
2. Satisfactory completion of the following courses (or their equivalents): COMP 1900, COMP 2150, COMP 2700, and COMP 3410.

Students without some of the prerequisites may be admitted on an individual basis, but any deficiency must be corrected within their first semester. None of these prerequisite courses may be used to fulfill graduate degree requirements.

### Program Requirements

#### Coursework Requirements

1. **Graduate Credit Requirement:** Students must complete at least 72 credit hours of graduate coursework in total.
2. **Ph.D. Core Requirement:** Students must complete the following Core Courses within the first 36 hours of credit, unless an extension is approved by the student's advisor. Students must obtain a grade of B or better in each of the Core Courses.

- COMP 7012 - Fndtns/Software Engr
  - COMP 7212 - Operating/Distrib Sys
  - COMP 7612 - Foundations of Computing
  - COMP 7712 - Algorithms/Prob Solv
  - COMP 7950 - Research Methods for Computer Science /COMP 8950 - Research Methods for Computer Science
3. **8000-Level Requirement:** At least 12 credit hours must be completed in courses at the 8000 level, other than **COMP 8901**.
  4. **Dissertation Requirement:** Students must complete at least 9 credit hours of Dissertation (**COMP 9000**).

## Coursework Limitations

Coursework used to satisfy the degree requirements is also subject to the following restrictions:

1. **Dissertation Credit Limit:** At most 18 hours of Dissertation (COMP 9000) are allowed.
2. **Independent Studies Credit Limit:** At most 21 credit hours of Independent Studies (COMP 7901/COMP 8901) are allowed.
3. **6000-Level Credit Limit:** At most 6 credit hours of 6000-level courses are allowed.
4. **Excluded Courses:** None of the following courses are allowed: COMP 6001, COMP 6005, COMP 6014, COMP 6030, COMP 6040, COMP 6270, COMP 6601, COMP 7960/COMP 8960

## Approved Master's Degree

Holders of a master's degree in computer science may, during the first semester in the program, petition the department to have their degree accepted as an Approved Master's Degree. For an Approved Master's Degree, the department designates up to 33 credits as Approved Master's Degree Credits. The Graduate Credit Requirement for a student with an Approved Master's Degree is reduced by the number of Approved Master's Degree Credits. However, for students with an Approved Master's Degree, coursework used to satisfy the degree requirements is also subject to the following restrictions: (1) only course credits at the 8000 level or above are allowed, and (2) at most 18 credit hours of Independent Studies (COMP 8901) are allowed.

## Transfer Credits

Students who are requesting credit transfer from another graduate program must submit an application during the student's first semester in the program. The application will be evaluated by the student's advisor and the Graduate Coordinator to determine the number of credits that can be transferred towards completion of the degree requirements. The number of credit hours transferred is limited by the Graduate School.

## Examinations

1. **Qualifying Examination:** Satisfactory completion of the Ph.D. Core Requirement is deemed as passing the qualifying examination.
2. **Comprehensive Examination:** Given and evaluated by a committee composed of departmental and university representatives upon presentation of a dissertation proposal.
3. **Dissertation and Final Examination:** Given and evaluated by a committee composed of departmental and university representatives upon completion of a dissertation. Dissertations must follow the Thesis/Dissertation Preparation Guide.

## Counseling Psychology, (PhD)

### PhD Degree Programs

The Counseling Psychology program is fully accredited by the American Psychological Association and prepares psychologists who embody a scientific approach to understanding and working with both specific and general problems in human behavior. The program is interdisciplinary and is organized around the scientist-practitioner model of critical thinking. It is implemented through didactic and experiential activities that emphasize research, development, evaluation, and learning as bases for prevention and remediation to assist persons of all ages and all life styles with improving and optimizing their well-being. The program has sufficient flexibility for students to pursue their own interests.

## Program Prerequisites (or their equivalent) at the masters level:

Group Processes, Assessment/Evaluation, Career Counseling, Counseling Theories, Practicum/Clinical Techniques, Multicultural Counseling, and Research/Data Analysis. Students who have not completed these courses prior to entering the doctoral program must complete them early during their course of studies at the University of Memphis and prior to taking advanced courses in the same topic area.

## Program Admission

A limited number of applicants are admitted once each year only for admission in the Fall semester; applicants for Spring admission are not considered. All application credentials must be received by December 5 for an applicant to be considered. Applicants to the doctoral program in Counseling Psychology typically hold a master's degree (or equivalent) in counseling, psychology, or a related mental health area. Applications from students having a bachelor's degree (or equivalent) in counseling, psychology, or a related mental health area will be considered if they have had substantial academic, clinical, or research work experience beyond the undergraduate degree.

Multiple criteria will be used when considering applicant admission, including, but not limited to, competitive GRE scores, undergraduate and graduate grade point average, personal statement, letters of recommendation, clinical and research experience, and interviews. A completed application packet will include the following: Graduate School application, departmental application, GRE scores, graduate transcripts, and four letters of recommendation from persons familiar with the applicant's academic record and potential for graduate study in counseling psychology.

## Program Requirements

Program prerequisites as noted above

### 13 semester hours in Discipline Specific Knowledge

13 semester hours in Discipline Specific Knowledge that cover each of the following content areas: Affective Aspects of Behavior, Biological Aspects of Behavior, Cognitive Aspects of Behavior, Developmental Aspects of Behavior, Social Aspects of Behavior, History and Systems of Psychology (1 credit), and Advanced Integrative Knowledge.

### 6 semester hours in Counseling Psychology Foundations and Professional Issues

- CPSY 8101 - CPSY Foundations/Prfnsnl Issues **Credit Hours: (3)**
- CPSY 8201 - Advocacy, Consultation, & Ethics **Credit Hours: (3)**

### 6 semester hours in Psychometric Theory and Methods

- CPSY 8575 - Adult Pers Assessmnt **Credit Hours: (3)**
- CPSY 8576 - Adult Cog Assessment **Credit Hours: (3)**

or



- approved alternatives

## 12 semester hours in Research Methods/Data Analysis

- EDPR 8541 - Stat Meth App Ed I \*\* Credit Hours: (3)
- EDPR 8542 - Statistical Methods Applied to Education II Credit Hours: (3)
- EDPR 8549 - Multivariate Methods Credit Hours: (3)

or

- approved alternatives  
or EDPR 8562 (Designing Qualitative Research)
- CPSY 8203 - Sem Coun/Coun Psy Res Credit Hours: (3)

Students who enter the program with a strong statistical background may waive EDPR 8541 and go directly into EDPR 8542. However, students who begin the statistics sequence with EDPR 8542 must still complete two additional statistical courses. Students who plan to take EDPR 8562 (Designing Qualitative Research) must complete the prerequisite EDPR 8561 (Qualitative Mthds Educ) course as one of the approved alternatives.

## 18 semester hours in Counseling

- CPSY 8102 - Seminar In Grp Cpsy Credit Hours: (3)
- CPSY 8202 - Vocational Psychology Credit Hours: (3)
- CPSY 8577 - Supervisn in Coun Psyc Credit Hours: (3)
- COUN 8721 - Thry/Tchnqs Fam Thrpy Credit Hours: (3)
- COUN 8750 - Multicultural Counseling Credit Hours: (3)

or

- approved alternative
- CPSY 8784 - Adv Coun Psych Theories Credit Hours: 3

## For students who enter with a master's degree that included clinical practicum

For students who enter with a master's degree that included clinical practicum, a minimum of 6 semester hours in counseling psychology practicum, CPSY 8200 and 450 clock hours, of which 150 must be direct contact hours, is required. Following completion of the minimum requirements, students may enroll in additional credits of CPSY 8200 or CPSY 8300 as electives. No more than a total of 15 practicum or advanced practicum credits will count toward the program requirements. Students entering with a bachelor's degree and no supervised clinical practicum will be required to take 9 hours of counseling psychology practicum (CPSY 8200). These students may count up to 18 credits of practicum or advanced practicum toward the program requirements.

## 15 semester hours of Electives in a Concentration

### Residency Project and Comprehensive Examinations:

Upon completion of the core counseling psychology coursework, each doctoral student will complete a written comprehensive examination covering the core counseling psychology clinical, research, and professionalism domains and an oral examination. Completion of the research-based residency projects (authorship on one conference presentation and authorship on one manuscript submission) is due by the completion of the doctoral program.

## 6 semester hours in Dissertation

Minimum of 6 credit hours, maximum of 9 credit hours that can be applied toward the degree. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

- **CPSY 9000 - Dissertation Credit Hours: (1-12)**

### 3 semester hours in Predoctoral Internship

A full-time one-year internship in Counseling Psychology in an agency approved by the Director of Training is required. Minimum of 3 credits, 1 credit per semester.

- **CPSY 8800 - Predoctoral Internship Credit Hours: (1-6)**

## Enrollment

The counseling psychology program is a full-time program of study. Students who enter with a master's degree are able to complete the required coursework in three years and complete a one-year internship in their fourth year. Students who enter with a bachelor's degree are able to complete the required course work in four years and complete a one-year internship in their fifth year. Candidates for the PhD degree in counseling psychology are expected to carry a minimum of 9 credit hours per semester. It is necessary to enroll in 12 credit hours per semester (6-9 in summer) in order to complete the program coursework in the expected time periods.

## Professional Competency

Candidates for the PhD in counseling psychology are specializing in a profession. The PhD degree represents more than the accumulation of the specified number of semester hours credit. The student has responsibility to the public and to the psychology profession to ensure that satisfactory levels of professional and research competencies are attained.

## Counselor Education and Supervision, (PhD)

### PhD Degree Program

The PhD program in Counseling is designed to prepare advanced professional practitioners in counseling, counselor education and counselor supervision with particular program emphases on multicultural and urban settings. Entry into the program presumes a master's degree in counseling wherein one has acquired knowledge and skills in human development, helping relationships, group counseling, lifestyle and career development, assessment techniques, research and evaluation and clinical experiences in applied settings. The PhD is designed for individuals seeking advanced preparation as educational leaders in the roles of counselor educator, counselor supervisor, professional counselor, and researcher. The PhD is not appropriate for individuals seeking preparation or licensure as a psychologist.

Program objectives are: (1) comprehension of concepts and theories underlying the profession of counseling; (2) ability to collect, analyze, and interpret individual and group data, and to generate and test hypotheses related to human behavior; (3) ability to effectively counsel in both individual and group settings; (4) ability to formulate, implement, and evaluate appropriate counseling programs and interventions; (5) ability to understand and demonstrate ethical behavior and the legal and ethical implications of that behavior; and (6) development of sensitivity and understanding of the needs of persons who are culturally different, including the ability to (a) examine attitudes and myths regarding the culturally different and (b) the sociopolitical forces impacting the culturally different client.

### Program Prerequisites

A master's degree in counseling that meets CACREP or CORE standards for core knowledge and skills. Students with a master's degree in counseling that does not contain all core areas can be considered for admission, but will be required to complete additional coursework prior to enrolling in doctoral level courses.

## Program Admission

1. Applicants must apply to the Graduate School and to the program. The Doctor of Philosophy degree in Counselor Education & Supervision is a limited access program; not all eligible candidates are admitted. To be considered for admission, applicants must:
  - provide official undergraduate and graduate transcripts of all academic work completed,
  - submit a Graduate Record Exam (GRE) score,
  - complete a program admission application including appropriate goals essay,
  - provide three letters of academic and/or professional reference,
  - undergo an interview with the faculty, and submit a writing sample.
2. The program selections committee selects students after all application materials and the personal interview are completed. Deadline for the completion of all admissions requirements is March 1 for the fall semester. Students are admitted one time per year and must begin their coursework during the fall semester.

## Program Requirements

Thirty (30) semester hours in the major, including:

- COUN 8501 - Doctoral Seminar Counseling **Credit Hours: 3**
  - COUN 8502 - Counseling Residency Research Seminar **Credit Hours: (3)**
  - COUN 8510 - Counselor Supervision **Credit Hours: (3)**
  - COUN 8511 - Practicum in Counseling **Credit Hours: (3)**
  - COUN 8512 - Teaching Counselor Education **Credit Hours: (3)**
  - COUN 8530 - Doctoral Intern Counseling **Credit Hours: (3-12)**
  - COUN 8831 - Adv Group Processes **Credit Hours: (3)**
  - COUN 8841 - Adv Coun Thry & Tech **Credit Hours: (3)**
- Select from one of the following courses for Multicultural/Diversity/Social Justice Issues in Counseling:
- COUN 8700 - Spiritual Issues in Counseling **Credit Hours: (3)**
  - COUN 8751 - Gender Issues In Coun **Credit Hours: (3)**
  - COUN 8752 - Coun Gay/Lesbian/Bisexl **Credit Hours: (3)**
  - COUN 8820-8823 - Special Topics in Counseling **Credit Hours: (1-3)**
  - CPSY 8798 - Soc Just Coun **Credit Hours: (3)**

Fifteen (15) semester hours in research:

- EDPR 8541 - Stat Meth App Ed I \*\* **Credit Hours: (3)**
- EDPR 8542 - Statistical Methods Applied to Education II **Credit Hours: (3)**
- EDPR 8561 - Qualitative Mthds Educ \*\* **Credit Hours: (3)**
- EDPR 8511 - Intro Ed and Psych Measurement \*\* **Credit Hours: 3**

- CPSY 8203 - Sem Coun/Coun Psy Res **Credit Hours: (3)**

Six (6) Elective semester hours:

such as marriage and family, crisis intervention, career, rehabilitation, school, mental health counseling, etc.

Nine (9) semester hours of dissertation:

NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

- COUN 9000 - Dissertation **Credit Hours: (1-9)**

All students:

All students must maintain a cumulative grade point average of 3.0 and make no less than a B- in all required courses.

## Doctor of Social Work, (DSW)

The Doctor of Social Work (DSW) degree is designed to further the education and enhance the practice and research skills of practicing social workers. The mission of University of Memphis' DSW program will be:

The mission of the Doctor of Social Work (DSW) program is to prepare practitioner-scholars who can generate new social work knowledge and respond to increasingly complex practice environments. The DSW program seeks to enhance the professional skills of practicing social workers and prepare them for supervision, teaching, management, and data-driven decision-making.

## Admission Requirements

1. A Master of Social Work from a program accredited by the Council on Social Work Education (CSWE).
2. Submission of GRE scores (in addition to GRE scores, international applicants should submit Test of English as a Foreign Language (TOEFL) Scores.).
3. Submission of transcripts from undergraduate program and MSW program.
4. A Professional Goal Statement. See program website for specific requirements.
5. A Professional Resume/CV.
6. Three letters of reference.
7. Two years of full-time post-MSW practice experience (or equivalent part-time experience).

## Program Requirements

Minimum Required: 48 hours

Required Courses: 42 hours

Required Courses are as follows:

- SWRK 8020 - Quantitative SW Research **Credit Hours: (3)**
- SWRK 8030 - Qualitative Methods in Social Work Research **Credit Hours: 3**
- SWRK 8040 - Advanced SW Theory \*\* **Credit Hours: (3)**

- SWRK 8050 - Writing for Publication **Credit Hours: (3)**
- SWRK 8060 - Developing Fundable Proposals **Credit Hours: 3**
- SWRK 8080 - Managing SW Practice **Credit Hours: (3)**
- SWRK 8155 - Informatics & Data Driven Decision Making in Social Work **Credit Hours: 3**
- SWRK 8175 - Reflective Supervision **Credit Hours: 3**
- PADM 8600 - Sem Adm Theory & Ethics \*\* **Credit Hours: (3)**
- Electives (12)
- SUAP 8100 - Public Policy Statistics **Credit Hours: (3)**

## Dissertation: 6 hours

Students are required to complete a minimum of 6 hours of dissertation.

- SWRK 9000 - Dissertation **Credit Hours: (1-6)**

## Retention Requirements

1. Students in the DSW program must comply with all retention standards of the Graduate School at the University of Memphis.
2. All students are required to maintain a cumulative GPA of at least 3.00. Should the student's cumulative GPA fall below that mark, a period of one semester will be allowed to correct the deficiency. Students failing to improve their GPA to an acceptable level in that time will be dismissed from the program.
3. No more than 6 hours of "C-," "C" or "C+" will be applied toward meeting degree requirements. No grade of a D+ or lower will count toward the degree.

## Graduation Requirements

1. Completion of all required coursework with no more than 6 hours of C grades.
2. Completion of a dissertation.

## Earth Sciences - Geophysics Concentration, (PhD)

The Earth Sciences PhD Geophysics concentration is housed in the Center for Earthquake Research and Information.

Program objectives are: (1) understanding geophysical concepts and theories and in-depth knowledge in a chosen branch of geophysics; (2) experience formulating and conducting original research projects; (3) experience in data acquisition and analysis methods, and oral and written presentation of research results; (4) become competitive for professional positions in geophysics.

## Program Admission

See MS Degree Program Requirements.

## Program Requirements

## Course Work Requirements

The doctoral degree program includes the requirement of the satisfactory completion of a minimum of 72 hours of graduate credit beyond the Bachelor's degree. The 72 credit hour total is subject to the following restrictions:

1. No more than 12 credit hours at the 6000 level may be counted toward the Ph.D. degree.
2. At least 12 credit hours must be in courses numbered CERI 8104-CERI 8702.
3. A maximum of 36 credit hours for CERI 9000 - Dissertation may be counted toward the Ph.D. degree. A minimum of 6 credit hours of CERI 9000 is required.
4. A maximum of 6 credit hours of CERI 8621 (Independent Study) may be counted toward the Ph.D. degree.
5. A maximum of 32 hours of graduate course credit completed at the University of Memphis or another accredited institution (including credit applied to a MS degree) may be applied to the 72 credit hour requirement subject to the approval of the students graduate committee. A minimum of 9 hours other than CERI 8621, 8701, 8702, 9000 must be completed at the University of Memphis.
6. The last 30 hours of credit must be earned at the University of Memphis.

## Residency

A student must commit to full-time study for a minimum of two successive semesters after admission to the degree program to fulfill the residency requirement. The purpose of the residency requirement is to provide students with significant time for sustained participation with peers and faculty in scholarly and creative activities. Summer terms will count toward residency.

## Qualifying Examination

The purpose of the qualifying examination is to determine if a student has the appropriate aptitude and background to be retained in the Ph.D. program. The student is required to write an abstract identifying an original research proposition. The subject of the proposition may or may not become part of the dissertation. The examination will begin by the student giving a brief presentation of the material in the abstract. An oral examination, not to exceed two hours, will follow covering the topic described in the abstract but the questions can and should broaden to other areas. The qualifying examination will be given just prior to the start of the third semester of residence. If the student does not pass on the first attempt, the examination can be taken a second time at the beginning of the fourth semester.

## Comprehensive Examination

A comprehensive examination will be administered by the student's graduate committee covering course work taken within the program just before the start of the fifth semester of residence. The student will take a one day, 6 hour written examination. This will be followed by a two-hour oral examination scheduled no later than two days following the written examination. The oral examination will be broad in nature. The graduate committee members will grade the written exam and discuss the overall performance of the student. In general, a student will have to receive a grade of 60% or higher on the written portion of the exam to pass. If a majority of the committee members vote pass, recommendations may be made to remove deficiencies in background by coursework or reading. In the event of a tie, the outcome is a failure and the committee may recommend completion of a M.S. thesis followed by a reexamination, or a second examination at the option of the student. A second failure of the comprehensive exam results in termination.

## The Advisory Committee

Upon admission, a student will be assigned a temporary committee consisting of 5 faculty members based upon research interests expressed in the application documentation. A permanent advisor and committee must be selected at the start of the first Spring Break for students entering in the fall semester and the start of the first fall semester for students entering in the spring semester. One member of the permanent committee must be external to CERI. External members from other universities/institutions/agencies may serve on the Ph.D. committee but must obtain adjunct faculty status through the University of Memphis and must agree to be present for the dissertation defense.

## Submission of Manuscripts to Refereed Journals

Each student is required to be an author on two manuscripts submitted to refereed journals. The student does not have to be first author on either manuscript to fulfill this requirement but **must be first author on any manuscript included in his/her dissertation**. Both manuscripts must be submitted prior to filing for candidacy.

## Doctoral Research and Dissertation

A minimum of six semester hours of CERI 9000 - Dissertation is required for the doctoral degree. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

## Final Oral Examination

The student's graduate committee will administer a final oral examination based upon the student's dissertation after completion of all other requirements. This examination will be held two weeks after the student has distributed the dissertation to the graduate committee and must occur at least one week before the deadline for submission of material to the Graduate School for review. If the oral examination is unsatisfactory, it must be repeated within one year and may not be repeated more than once.

## Retention

A student pursuing the doctoral degree may be terminated for any of the following reasons:

1. Failure to maintain a grade point average of 3.0 or above. A student who has a cumulative grade point average below 3.0 will be placed on probation. The Dean of the Graduate School must approve continuation in graduate school. Any person whose continuation is denied may appeal the decision to the University Council for Graduate Studies.
2. Failure to pass the Qualifying exam.
3. Failure to pass the Comprehensive Examination.
4. Failure to make satisfactory progress towards completion of the degree in a timely manner, as determined by the student's graduate committee.
5. Failure to satisfy the graduate committee on the final oral examination.

## Earth Sciences, (PhD)

### PhD Degree Program

Program objectives are: (1) understanding in at least one of the major disciplines of earth science and principles and concepts of that discipline with a more in-depth knowledge in the chosen research focus or foci; (2) expertise in experimental design, data analysis, and oral and written presentation of research results; and (3) competitive for professional positions in the field earth sciences.

### Nature of the Program

The doctorate prepares the student for a research career, primarily by establishing a broad knowledge of one of the basic areas of geography, geology, or geophysics, and through the experience of successfully completing a dissertation of original research. The prescribed examinations will permit the student to demonstrate mastery of his or her chosen fields of expertise. The individual curriculum will reflect the student's preparation and the demands of the dissertation topic selected, and will assure a strong general knowledge of Earth Sciences.

## Program Requirements

1. Completion of a minimum of 72 semester hours beyond the bachelor's degree or a minimum of 40 semester hours beyond the masters degree. The courses to be completed shall be determined in consultation with the student's graduate committee.
2. Satisfactory performance on the Qualifying Examination. The Qualifying Examination will be given at the beginning of the third semester of residence, on or before a date set by the discipline Graduate Coordinator. At least one week prior to the examination date, a PhD student will present to his/her committee an abstract describing a topic that involves original research. *The abstract should be no longer than one page and must describe an original concept or approach to a research problem with a suspected positive outcome deduced by the student.* The subject may or may not become part of the dissertation. The exam will begin by the student giving a 15 to 20 minute presentation of the material in the abstract. An oral exam, not to exceed two hours, will follow covering (primarily) the topic described in the abstract but the questions can and should broaden to other areas.
3. Satisfactory completion of a Comprehensive Examination. The Comprehensive Examination will be given at the beginning of the fifth semester of residence, on a date set by the Graduate Coordinator. The purpose of the comprehensive examination is to determine the student's understanding of the chosen field of specialization ("depth") as well as general knowledge in earth sciences ("breadth"). The comprehensive examination will consist of a two-day (12 hours maximum) written examination followed no more than two days later by a two-hour oral examination. The oral examination will be used to clarify any points left in question by the written responses. A student should consult his or her dissertation advisor and graduate committee regarding the areas in which comprehension is expected.
4. Submission of two manuscripts for publication in peer-reviewed journals or books.
5. Completion and successful defense of a dissertation: (ESCI 9000) at least 9 hours. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

## Educational Psychology and Research, (PhD)

### PhD Degree Programs

The PhD degree program in Educational Psychology and Research is designed to prepare innovative researchers and professional practitioners for university teaching, applied research, or other professional roles through interdisciplinary training in fields of human development (infancy, childhood, and adolescence, adulthood and aging), learning processes (motivation, cognitive processes and learning science), quantitative and qualitative research methods, and program evaluation.

Since the purpose of this doctoral training is to prepare students to conduct research in a specialized area, individuals with no interest and plan to conduct research should not apply to this doctoral program.

Program objectives are: (1) to contribute to the professional field through applied research (i.e. presentations, publications and scholarly writing); (2) to prepare for careers as academicians in institutions of higher education and/or applied researchers in professional settings; (3) to develop leadership skills for professional organizations through evidence-based professional activities.

### Program Admission

The PhD degree program accepts qualified applicants into one of two degree paths: (1) the traditional path for those with a master's degree or (2) the accelerated path for those with a bachelor's degree. Applicants pursuing the accelerated path typically will have graduated from an undergraduate honors program with a high GPA and have relevant research experience; furthermore, with a pursuant commitment to studying full-time.

Applicants to the PhD degree program are evaluated two times a year. For spring admission, the application deadline is November 1<sup>st</sup>. For fall admission, the application deadline is March 1<sup>st</sup>. International applications are reviewed for fall admission only. Applicants must go to [https://www.memphis.edu/graduateadmissions/future/apply\\_grad.php](https://www.memphis.edu/graduateadmissions/future/apply_grad.php) to complete their application.



Multiple criteria will be used when considering applicant admission. In addition to the required undergraduate and graduate transcripts, grade point average, GRE scores, and relevant employment history, the following will be given careful consideration

Letters of recommendation from at least three university faculty members familiar with the applicant's academic background and aptitude for graduate work, specifying in detail the applicant's ability and potential to conduct research for future performance and scholarship.

A statement of 800-1200 words indicating the applicant's prior research experience, present research interests, relevant professional experiences, and future career goals.

An identification of 2-3 potential Educational Psychology and Research faculty members the applicant would like to work with based on mutual research interests or methodologies, including reviewing their websites and publications.

A writing sample by the applicant only, such as a previously completed university term paper or a similar expository writing from the applicant's professional activity.

- A willingness to be interviewed by members of the Educational Psychology & Research faculty, should that be required.

## Program Requirements

### Credit Hours:

For those admitted with a master's degree, a minimum of 42 hours of graduate course credit at the 8000 level must be completed. For those admitted with a bachelor's degree, a minimum of 72 hours of graduate course credit must be completed, with 30 hours taken at the 7000 level to meet the requirements and be awarded a master's degree and 30 hours taken at the 8000 level. Additionally, both tracks must complete a minimum of 12 dissertation hours.

### Core Competency:

All students upon admission into the doctoral program must demonstrate competencies in the three core domains (research methods, human development, learning and cognition) as prerequisites for further coursework. Students may demonstrate their competency by (a) having earned at least a 3.0 in a master's level course in each of the above domains, or (b) passing validation exams. Doctoral students without proficiency in any of these core domains must complete the appropriate entry level course before more advanced coursework. These entry level courses will not count toward the minimum of 54 hours required.

### Core Courses (minimum 27 credits):

- EDPR 8121 - Learning & Cognition **Credit Hours: (3)**
- EDPR 8131 - Cultural Diverse Stdnts **Credit Hours: (3)**
- EDPR 8171 - Pro Sem in Edu Psychology **Credit Hours: (3)**
- EDPR 8521 - Intro Res Design & Methodology **Credit Hours: (3)**
- EDPR 8541 - Stat Meth App Ed I \*\* **Credit Hours: (3)**
- EDPR 8561 - Qualitative Mthds Educ \*\* **Credit Hours: (3)**  
Select one of these three development courses:
- EDPR 8111 - Child Development & Education **Credit Hours: 3**
- EDPR 8112 - Adolescent Development & Educ **Credit Hours: 3**

- **EDPR 8114 - Psychology Of Aging Credit Hours: (3)**

Select one of these two educational psychology courses:

- **EDPR 8150 - Motivation Credit Hours: (3)**
- **EDPR 8161 - Moral Dvlpmnt & Educ Credit Hours: (3)**

Select one of these two research courses:

- **EDPR 8542 - Statistical Methods Applied to Education II Credit Hours: (3)**
- **EDPR 8562 - Designing Qualitative Research \*\* Credit Hours: (3)**

Students on the accelerated path should take at least 18 hours of the core courses at the 7000 level, including 1 development course, 1 education psychology course, EDPR 7171, EDPR 7561, EDPR 7521, and EDPR 7541. In addition, they should take 3 elective courses and the final EDPR 7000 capstone project.

Upon completion of their MS degree, these students should take the remaining core courses and other electives at the 8000 level for a minimum of 30 credit hours before they take EDPR 9000 Dissertation for 12 hours. The total required credit hours for this accelerated path is 72 hours.

### Program Electives (9 credits at 8000 level)

These nine credit hours should be taken within the EDPR program and be planned with the major advisor.

### Electives outside of Major (6 credits at 8000 level)

These six credit hours are to be taken outside of EDPR at the 8000 level and will be planned with the major advisor to focus on the area of research.

### Residency Project Requirement:

All doctoral students must complete an independent research-based residency project approved by the major advisor, resulting in a written research paper that is either (a) submitted to and peer-reviewed by a refereed journal or (b) submitted to and presented at a refereed professional conference that the major advisor approves.

### Comprehensive Examination:

Upon completion of coursework and the residency project each doctoral student will complete a three-part open-book written comprehensive examination covering one or more of the three core domains of knowledge in the EDPR program: human development, learning and cognition, and research methods. The student's advisor will coordinate this written examination. The written examination that the student's advisor will coordinate should reflect the three core domains of the program.

The student's advisory committee members will administer the relevant examination. An oral examination will follow the written examination. Doctoral students who have passed the written and oral comprehensive examination are accepted as doctoral candidates.

### Dissertation and Final Defense (12 credits- EDPR 9000):

A dissertation proposal and a dissertation that are approved by the EDPR faculty are two requirements for all doctoral students. The dissertation must embody the results of an extended research effort that is an original contribution to the existing body of research. The dissertation should reflect the candidate's ability to conduct independent research and interpret in a logical manner the findings and phenomena revealed by the research through application of a relevant theoretical framework and a method. Students may elect either to write a traditional five-chapter dissertation or to write two journal articles and submit them with the approval of the committee for journal reviews. Upon completion of the dissertation, each student will orally defend the research undertaken.

**NOTE:** Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

- EDPR 9000 - Dissertation Credit Hours: (1-12)

## Engineering - Civil Engineering Concentration, (PhD)

### PhD Degree Program

#### Program Admission

The Herff College of Engineering has established uniform admissions criteria for all graduate programs. Exceptions to these requirements may be addressed by the Graduate Admissions and Retention Committee of the department and must be approved by the Dean of Engineering.

Applicants will be considered for admission to the doctoral program based upon their educational background, Graduate Record Examination (GRE) scores, grade point average (GPA), and three letters of recommendation from previous instructors/professors attesting to their academic ability and potential for success in a doctoral program.

In most cases, applicants will be considered for admission after completion of a masters degree. However, in certain cases, highly qualified applicants will be considered for admission to the doctoral program after the attainment of a bachelors degree. It may be suggested that the student complete a masters degree while in pursuit of the doctoral degree.

In addition to the above requirements, all applicants must submit an application for admission to The University of Memphis. Applicants whose native language is other than English must have a competitive score on the Test of English as a Foreign Language (TOEFL) or The International English Language Testing System (IELTS).

The department of study for an applicant whose highest degree is from an international university may require that their credentials be evaluated. The department of study will accept evaluations done by any credentialing agency listed on the National Association of Credential Evaluation Services web site (<http://www.naces.org>). A course-by course report is required.

Depending on the applicant's educational background, the Advisory Committee for the individual graduate student may require additional coursework to prepare the student for doctoral studies. The Advisory Committee is composed of Graduate Faculty from the College. The Department Chair, the Director of Graduate Studies for the College and the Graduate School will review and approve the Committee.

In unusual circumstances where the above admission requirements cannot be met, an applicant may seek exceptions by contacting the Director of Graduate Studies for the college.

Applicants are further advised that the College reserves the right to deny some applications for admission because of limited availability of faculty and/or physical facilities to accommodate the student's research interests.

**English Conditional Admission:** International students are required to demonstrate a strong grasp of the English language before admission into graduate programs. Conditional admission may be granted depending on individual academic departmental policy. If English conditional admission is offered, students will need to register for English skills assessment and take instructional sessions (if required as a result of that assessment) through the University's Intensive English for Internationals (IEI) program (<http://www.memphis.edu/iei>). Upon successful completion of the requisite sessions, as determined by IEI, the student's English skills will be considered up to standard and the TOEFL/IELTS requirement may be waived depending on specific academic department policy. The student can then proceed into their graduate academic program. Please note that in order to have a complete application packet, students seeking English conditional admission will need to simultaneously apply for the IEI program through the link above and to the Graduate School ([www.memphis.edu/graduateadmissions](http://www.memphis.edu/graduateadmissions)).

Please note that a student cannot be a graduate assistant (GA) until they have been fully admitted and have begun their graduate academic program. Please review your academic program department's website and graduate catalog entries to determine if

English conditional admission is offered. Questions can be directed to the program's graduate coordinator. Students will pay IEI fees until they meet the language criterion. If courses are taken outside of IEI, the student will be charged additional tuition at the regular rate.

## Retention Requirements

A student will be retained continuously in the program until completion of the degree providing the following conditions are met:

1. All students will be required to maintain a grade point average (GPA) of at least 3.00. Should the student's GPA fall below that mark, a period of one semester or one full summer term will be allowed to correct the deficiency. Failure to regain the minimum 3.00 is considered sufficient reason for being dropped from the program. This period may, at the discretion of the student's advisory committee, be extended one additional semester or full summer term. If the GPA at the end of this extension is still below 3.00, the student will be dismissed from the program.
2. Accumulation of more than 7 semester hours of cumulative graduate coursework with a grade of "C+" or lower will result in dismissal from the program, i.e., a student who accumulates 6 hours of graduate coursework with a grade of "C+" or lower in a masters program is permitted only one additional hour with a grade of "C+" or lower.
3. All students are required to complete a comprehensive examination with at least a minimum passing score on the written portion and a satisfactory performance on the oral portion of the exam. A second and final attempt to pass this examination may be granted by the student's Advisory Committee; failure will result in mandatory dismissal from the program.
4. All students must demonstrate reportable activity and progress on their research project to their advisory committee each fall and spring semester after dissertation hours are started. This reportable activity should also be submitted in writing to the Department Chair.

Grade point averages above are based on a 4.00 grading system where A = 4.00. Students presenting transcripts using a different system will be held to similar standards.

## Graduation Requirements

**General Requirements:** Each student must earn at least 72 semester hours beyond the bachelors degree or 42 semester hours beyond the masters degree (see Table 1A). Students can apply up to 24 semester hours of dissertation credit toward these requirements. Early in each student's program of study, the Director of Graduate Studies, upon recommendation of the Departmental Chair, will approve an Advisory Committee composed of Graduate Faculty in the College. The Advisory Committee will guide the student's dissertation research and recommend coursework to support that research endeavor.

For students admitted with a bachelors degree, at least 48 of the 72 semester hours required, including dissertation and research credit, must be in the student's concentration. No more than 12 semester hours of credit for 6000 level courses will count toward the PhD degree. (See Table 1B)

For students admitted with a masters degree, at least 30 of the 42 semester hours required, including dissertation and research credit, must be in the student's concentration. No more than 6 semester hours of credit for 6000 level courses will count toward the PhD degree.

Table 1A) Doctoral Program Options

Option	Total Credit Hours	Minimum Course Hours (excluding Dissertation)	Maximum Hours of Dissertation (9000 course)
Post Bachelor's Degree (BS)	72	48	24
Post Master's Degree (MS)	42	18	24

Table 1B) Doctoral Program Course Hours

Option	Maximum course hours at the 6000 level	Minimum course hours at the 7000/8000 level	Minimum course hours at the 7000/8000 level in the concentration
Post Bachelor's Degree (BS)	12	36	24
Post Master's Degree (MS)	6	12	12

**Residency Requirements:** A minimum of 18 semester hours must be earned while the student is in continuous residence. This may be done in two regular consecutive semesters. If the student is retained as a graduate assistant, the residency requirement may be met over a single continuous twelve-month period provided the student completes 18 semester hours in two successive regular semesters. A student is not eligible to complete the residency requirement until a minimum of 18 semester hours of graduate study have been successfully completed.

**Mathematics Requirements:** Based on the qualifying examination required of all The University of Memphis doctoral students, the advisory committee may stipulate that appropriate mathematics courses be made a part of the student's program.

**Examination Requirements:** All students must take a qualifying examination in accordance with University policy outlined under Minimum Requirements for Doctoral Degrees in this catalog. This examination, which is intended to determine the student's mastery of broad fundamental concepts, will be typically given only after the student has completed between 9 to 27 semester hours of graduate study. For students entering the program with a masters degree, the exam will occur early in their PhD program as directed by the student's Advisor and Advisory Committee. The results will be used to prescribe the remainder of the student's academic program, and successful completion of the qualifying exam is required for admission to candidacy as a doctoral student.

The examination will generally be given in written form. However, the student's committee may require an oral session before making a final decision on the student's qualification to continue his/her studies.

After the final semester of coursework, the student will be required to successfully complete written and oral comprehensive examinations that will ascertain the student's mastery of the theoretical material that will underlie the dissertation topic. The student's Advisory Committee will conduct this oral comprehensive exam.

At the completion of the dissertation, the student must defend the work before the advisory committee and other interested members of the university faculty who may care to question the results of the research. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

**Course Requirements:** Nine semester hours of major mathematics, physical science and engineering principles core courses that integrate their doctoral experience are required of all doctoral students. This core is developed by the student's graduate Advisory Committee. Each concentration requires a minimum of 48 semester hours of coursework post Bachelor's Degree (and 24 post Master's Degree) plus research comprising the dissertation hours in the chosen field of study. Each student's program of study will be developed with the student's Advisory Committee. **NOTE: Students taking Engineering courses will be charged an additional \$35 per credit hour.**

## Concentration Requirements

- CIVL 8001 - Engineering Analysis Credit Hours: (3)
- CIVL 8012 - Prob Meth In Engr \*\* Credit Hours: (3)

# Engineering - Computer Engineering Concentration, (PhD)

## PhD Degree Program

### Program Admission

The Herff College of Engineering has established uniform admissions criteria for all graduate programs. Exceptions to these requirements may be addressed by the Graduate Admissions and Retention Committee of the department and must be approved by the Dean of Engineering.

Applicants will be considered for admission to the doctoral program based upon their educational background, Graduate Record Examination (GRE) scores, grade point average (GPA), and three letters of recommendation from previous instructors/professors attesting to their academic ability and potential for success in a doctoral program.

In most cases, applicants will be considered for admission after completion of a masters degree. However, in certain cases, highly qualified applicants will be considered for admission to the doctoral program after the attainment of a bachelors degree. It may be suggested that the student complete a masters degree while in pursuit of the doctoral degree.

In addition to the above requirements, all applicants must submit an application for admission to The University of Memphis. Applicants whose native language is other than English must have a competitive score on the Test of English as a Foreign Language (TOEFL) or The International English Language Testing System (IELTS).

The department of study for an applicant whose highest degree is from an international university may require that their credentials be evaluated. The department of study will accept evaluations done by any credentialing agency listed on the National Association of Credential Evaluation Services web site (<http://www.naces.org>). A course-by course report is required.

Depending on the applicant's educational background, the Advisory Committee for the individual graduate student may require additional coursework to prepare the student for doctoral studies. The Advisory Committee is composed of Graduate Faculty from the College. The Department Chair, the Director of Graduate Studies for the College and the Graduate School will review and approve the Committee.

In unusual circumstances where the above admission requirements cannot be met, an applicant may seek exceptions by contacting the Director of Graduate Studies for the college.

Applicants are further advised that the College reserves the right to deny some applications for admission because of limited availability of faculty and/or physical facilities to accommodate the student's research interests.

**English Conditional Admission:** International students are required to demonstrate a strong grasp of the English language before admission into graduate programs. Conditional admission may be granted depending on individual academic departmental policy. If English conditional admission is offered, students will need to register for English skills assessment and take instructional sessions (if required as a result of that assessment) through the University's Intensive English for Internationals (IEI) program (<http://www.memphis.edu/iei>). Upon successful completion of the requisite sessions, as determined by IEI, the student's English skills will be considered up to standard and the TOEFL/IELTS requirement may be waived depending on specific academic department policy. The student can then proceed into their graduate academic program. Please note that in order to have a complete application packet, students seeking English conditional admission will need to simultaneously apply for the IEI program through the link above and to the Graduate School ([www.memphis.edu/graduateadmissions](http://www.memphis.edu/graduateadmissions)).

Please note that a student cannot be a graduate assistant (GA) until they have been fully admitted and have begun their graduate academic program. Please review your academic program department's website and graduate catalog entries to determine if English conditional admission is offered. Questions can be directed to the program's graduate coordinator. Students will pay IEI fees until they meet the language criterion. If courses are taken outside of IEI, the student will be charged additional tuition at the regular rate.

## Retention Requirements

A student will be retained continuously in the program until completion of the degree providing the following conditions are met:

1. All students will be required to maintain a grade point average (GPA) of at least 3.00. Should the student's GPA fall below that mark, a period of one semester or one full summer term will be allowed to correct the deficiency. Failure to regain the minimum 3.00 is considered sufficient reason for being dropped from the program. This period may, at the discretion of the student's advisory committee, be extended one additional semester or full summer term. If the GPA at the end of this extension is still below 3.00, the student will be dismissed from the program.
2. Accumulation of more than 7 semester hours of cumulative graduate coursework with a grade of "C+" or lower will result in dismissal from the program, i.e., a student who accumulates 6 hours of graduate coursework with a grade of "C+" or lower in a masters program is permitted only one additional hour with a grade of "C+" or lower.
3. All students are required to complete a comprehensive examination with at least a minimum passing score on the written portion and a satisfactory performance on the oral portion of the exam. A second and final attempt to pass this examination may be granted by the student's Advisory Committee; failure will result in mandatory dismissal from the program.
4. All students must demonstrate reportable activity and progress on their research project to their advisory committee each fall and spring semester after dissertation hours are started. This reportable activity should also be submitted in writing to the Department Chair.

Grade point averages above are based on a 4.00 grading system where A = 4.00. Students presenting transcripts using a different system will be held to similar standards.

## Graduation Requirements

**General Requirements:** Each student must earn at least 72 semester hours beyond the bachelors degree or 42 semester hours beyond the masters degree (see Table 1A). Students can apply up to 24 semester hours of dissertation credit toward these requirements. Early in each student's program of study, the Director of Graduate Studies, upon recommendation of the Departmental Chair, will approve an Advisory Committee composed of Graduate Faculty in the College. The Advisory Committee will guide the student's dissertation research and recommend coursework to support that research endeavor.

For students admitted with a bachelors degree, at least 48 of the 72 semester hours required, including dissertation and research credit, must be in the student's concentration. No more than 12 semester hours of credit for 6000 level courses will count toward the PhD degree. (See Table 1B)

For students admitted with a masters degree, at least 30 of the 42 semester hours required, including dissertation and research credit, must be in the student's concentration. No more than 6 semester hours of credit for 6000 level courses will count toward the PhD degree.

Table 1A) Doctoral Program Options

Option	Total Credit Hours	Minimum Course Hours (excluding Dissertation)	Maximum Hours of Dissertation (9000 course)
Post Bachelor's Degree (BS)	72	48	24
Post Master's Degree (MS)	42	18	24

Table 1B) Doctoral Program Course Hours

Option	Maximum course hours at the 6000 level	Minimum course hours at the 7000/8000 level	Minimum course hours at the 7000/8000 level in the concentration
Post Bachelor's Degree (BS)	12	36	24
Post Master's Degree (MS)	6	12	12

**Residency Requirements:** A minimum of 18 semester hours must be earned while the student is in continuous residence. This may be done in two regular consecutive semesters. If the student is retained as a graduate assistant, the residency requirement may be met over a single continuous twelve-month period provided the student completes 18 semester hours in two successive regular semesters. A student is not eligible to complete the residency requirement until a minimum of 18 semester hours of graduate study have been successfully completed.

**Mathematics Requirements:** Based on the qualifying examination required of all The University of Memphis doctoral students, the advisory committee may stipulate that appropriate mathematics courses be made a part of the student's program.

**Examination Requirements:** All students must take a qualifying examination in accordance with University policy outlined under Minimum Requirements for Doctoral Degrees in this catalog. This examination, which is intended to determine the student's mastery of broad fundamental concepts, will be typically given only after the student has completed between 9 to 27 semester hours of graduate study. For students entering the program with a masters degree, the exam will occur early in their PhD program as directed by the student's Advisor and Advisory Committee. The results will be used to prescribe the remainder of the student's academic program, and successful completion of the qualifying exam is required for admission to candidacy as a doctoral student.

The examination will generally be given in written form. However, the student's committee may require an oral session before making a final decision on the student's qualification to continue his/her studies.

After the final semester of coursework, the student will be required to successfully complete written and oral comprehensive examinations that will ascertain the student's mastery of the theoretical material that will underlie the dissertation topic. The student's Advisory Committee will conduct this oral comprehensive exam.

At the completion of the dissertation, the student must defend the work before the advisory committee and other interested members of the university faculty who may care to question the results of the research. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

**Course Requirements:** Nine semester hours of major mathematics, physical science and engineering principles core courses that integrate their doctoral experience are required of all doctoral students. This core is developed by the student's graduate Advisory Committee. Each concentration requires a minimum of 48 semester hours of coursework post Bachelor's Degree (and 24 post Master's Degree) plus research comprising the dissertation hours in the chosen field of study. Each student's program of study will be developed with the student's Advisory Committee. **NOTE: Students taking Engineering courses will be charged an additional \$35 per credit hour.**

## Concentration Requirements

- EECE 8001 - Professional Development Credit Hours: (3)

## Engineering - Electrical Engineering Concentration, (PhD)

### PhD Degree Program



## Program Admission

The Herff College of Engineering has established uniform admissions criteria for all graduate programs. Exceptions to these requirements may be addressed by the Graduate Admissions and Retention Committee of the department and must be approved by the Dean of Engineering.

Applicants will be considered for admission to the doctoral program based upon their educational background, Graduate Record Examination (GRE) scores, grade point average (GPA), and three letters of recommendation from previous instructors/professors attesting to their academic ability and potential for success in a doctoral program.

In most cases, applicants will be considered for admission after completion of a masters degree. However, in certain cases, highly qualified applicants will be considered for admission to the doctoral program after the attainment of a bachelors degree. It may be suggested that the student complete a masters degree while in pursuit of the doctoral degree.

In addition to the above requirements, all applicants must submit an application for admission to The University of Memphis. Applicants whose native language is other than English must have a competitive score on the Test of English as a Foreign Language (TOEFL) or The International English Language Testing System (IELTS).

The department of study for an applicant whose highest degree is from an international university may require that their credentials be evaluated. The department of study will accept evaluations done by any credentialing agency listed on the National Association of Credential Evaluation Services web site (<http://www.naces.org>). A course-by course report is required.

Depending on the applicant's educational background, the Advisory Committee for the individual graduate student may require additional coursework to prepare the student for doctoral studies. The Advisory Committee is composed of Graduate Faculty from the College. The Department Chair, the Director of Graduate Studies for the College and the Graduate School will review and approve the Committee.

In unusual circumstances where the above admission requirements cannot be met, an applicant may seek exceptions by contacting the Director of Graduate Studies for the college.

Applicants are further advised that the College reserves the right to deny some applications for admission because of limited availability of faculty and/or physical facilities to accommodate the student's research interests.

**English Conditional Admission:** International students are required to demonstrate a strong grasp of the English language before admission into graduate programs. Conditional admission may be granted depending on individual academic departmental policy. If English conditional admission is offered, students will need to register for English skills assessment and take instructional sessions (if required as a result of that assessment) through the University's Intensive English for Internationals (IEI) program (<http://www.memphis.edu/iei>). Upon successful completion of the requisite sessions, as determined by IEI, the student's English skills will be considered up to standard and the TOEFL/IELTS requirement may be waived depending on specific academic department policy. The student can then proceed into their graduate academic program. Please note that in order to have a complete application packet, students seeking English conditional admission will need to simultaneously apply for the IEI program through the link above and to the Graduate School ([www.memphis.edu/graduateadmissions](http://www.memphis.edu/graduateadmissions)).

Please note that a student cannot be a graduate assistant (GA) until they have been fully admitted and have begun their graduate academic program. Please review your academic program department's website and graduate catalog entries to determine if English conditional admission is offered. Questions can be directed to the program's graduate coordinator. Students will pay IEI fees until they meet the language criterion. If courses are taken outside of IEI, the student will be charged additional tuition at the regular rate.

## Retention Requirements

A student will be retained continuously in the program until completion of the degree providing the following conditions are met:

1. All students will be required to maintain a grade point average (GPA) of at least 3.00. Should the student's GPA fall below that mark, a period of one semester or one full summer term will be allowed to correct the deficiency. Failure to regain the minimum 3.00 is considered sufficient reason for being dropped from the program. This period may, at the discretion of the student's advisory committee, be extended one additional semester or full summer term. If the GPA at the end of this extension is still below 3.00, the student will be dismissed from the program.
2. Accumulation of more than 7 semester hours of cumulative graduate coursework with a grade of "C+" or lower will result in dismissal from the program, i.e., a student who accumulates 6 hours of graduate coursework with a grade of "C+" or lower in a masters program is permitted only one additional hour with a grade of "C+" or lower.
3. All students are required to complete a comprehensive examination with at least a minimum passing score on the written portion and a satisfactory performance on the oral portion of the exam. A second and final attempt to pass this examination may be granted by the student's Advisory Committee; failure will result in mandatory dismissal from the program.
4. All students must demonstrate reportable activity and progress on their research project to their advisory committee each fall and spring semester after dissertation hours are started. This reportable activity should also be submitted in writing to the Department Chair.

Grade point averages above are based on a 4.00 grading system where A = 4.00. Students presenting transcripts using a different system will be held to similar standards.

## Graduation Requirements

**General Requirements:** Each student must earn at least 72 semester hours beyond the bachelors degree or 42 semester hours beyond the masters degree (see Table 1A). Students can apply up to 24 semester hours of dissertation credit toward these requirements. Early in each student's program of study, the Director of Graduate Studies, upon recommendation of the Departmental Chair, will approve an Advisory Committee composed of Graduate Faculty in the College. The Advisory Committee will guide the student's dissertation research and recommend coursework to support that research endeavor.

For students admitted with a bachelors degree, at least 48 of the 72 semester hours required, including dissertation and research credit, must be in the student's concentration. No more than 12 semester hours of credit for 6000 level courses will count toward the PhD degree. (See Table 1B)

For students admitted with a masters degree, at least 30 of the 42 semester hours required, including dissertation and research credit, must be in the student's concentration. No more than 6 semester hours of credit for 6000 level courses will count toward the PhD degree.

Table 1A) Doctoral Program Options

Option	Total Credit Hours	Minimum Course Hours (excluding Dissertation)	Maximum Hours of Dissertation (9000 course)
Post Bachelor's Degree (BS)	72	48	24
Post Master's Degree (MS)	42	18	24

Table 1B) Doctoral Program Course Hours

Option	Maximum course hours at the 6000 level	Minimum course hours at the 7000/8000 level	Minimum course hours at the 7000/8000 level in the concentration

Post Bachelor's Degree (BS)	12	36	24
Post Master's Degree (MS)	6	12	12

**Residency Requirements:** A minimum of 18 semester hours must be earned while the student is in continuous residence. This may be done in two regular consecutive semesters. If the student is retained as a graduate assistant, the residency requirement may be met over a single continuous twelve-month period provided the student completes 18 semester hours in two successive regular semesters. A student is not eligible to complete the residency requirement until a minimum of 18 semester hours of graduate study have been successfully completed.

**Mathematics Requirements:** Based on the qualifying examination required of all The University of Memphis doctoral students, the advisory committee may stipulate that appropriate mathematics courses be made a part of the student's program.

**Examination Requirements:** All students must take a qualifying examination in accordance with University policy outlined under Minimum Requirements for Doctoral Degrees in this catalog. This examination, which is intended to determine the student's mastery of broad fundamental concepts, will be typically given only after the student has completed between 9 to 27 semester hours of graduate study. For students entering the program with a masters degree, the exam will occur early in their PhD program as directed by the student's Advisor and Advisory Committee. The results will be used to prescribe the remainder of the student's academic program, and successful completion of the qualifying exam is required for admission to candidacy as a doctoral student.

The examination will generally be given in written form. However, the student's committee may require an oral session before making a final decision on the student's qualification to continue his/her studies.

After the final semester of coursework, the student will be required to successfully complete written and oral comprehensive examinations that will ascertain the student's mastery of the theoretical material that will underlie the dissertation topic. The student's Advisory Committee will conduct this oral comprehensive exam.

At the completion of the dissertation, the student must defend the work before the advisory committee and other interested members of the university faculty who may care to question the results of the research. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

**Course Requirements:** Nine semester hours of major mathematics, physical science and engineering principles core courses that integrate their doctoral experience are required of all doctoral students. This core is developed by the student's graduate Advisory Committee. Each concentration requires a minimum of 48 semester hours of coursework post Bachelor's Degree (and 24 post Master's Degree) plus research comprising the dissertation hours in the chosen field of study. Each student's program of study will be developed with the student's Advisory Committee. **NOTE: Students taking Engineering courses will be charged an additional \$35 per credit hour.**

## Concentration Requirements

- EECE 8001 - Professional Development Credit Hours: (3)

## Engineering - Mechanical Engineering Concentration, (PhD)

### PhD Degree Program

### Program Admission

The Herff College of Engineering has established uniform admissions criteria for all graduate programs. Exceptions to these requirements may be addressed by the Graduate Admissions and Retention Committee of the department and must be approved by the Dean of Engineering.

Applicants will be considered for admission to the doctoral program based upon their educational background, Graduate Record Examination (GRE) scores, grade point average (GPA), and three letters of recommendation from previous instructors/professors attesting to their academic ability and potential for success in a doctoral program.

In most cases, applicants will be considered for admission after completion of a masters degree. However, in certain cases, highly qualified applicants will be considered for admission to the doctoral program after the attainment of a bachelors degree. It may be suggested that the student complete a masters degree while in pursuit of the doctoral degree.

In addition to the above requirements, all applicants must submit an application for admission to The University of Memphis. Applicants whose native language is other than English must have a competitive score on the Test of English as a Foreign Language (TOEFL) or The International English Language Testing System (IELTS).

The department of study for an applicant whose highest degree is from an international university may require that their credentials be evaluated. The department of study will accept evaluations done by any credentialing agency listed on the National Association of Credential Evaluation Services web site (<http://www.naces.org>). A course-by course report is required.

Depending on the applicant's educational background, the Advisory Committee for the individual graduate student may require additional coursework to prepare the student for doctoral studies. The Advisory Committee is composed of Graduate Faculty from the College. The Department Chair, the Director of Graduate Studies for the College and the Graduate School will review and approve the Committee.

In unusual circumstances where the above admission requirements cannot be met, an applicant may seek exceptions by contacting the Director of Graduate Studies for the college.

Applicants are further advised that the College reserves the right to deny some applications for admission because of limited availability of faculty and/or physical facilities to accommodate the student's research interests.

**English Conditional Admission:** International students are required to demonstrate a strong grasp of the English language before admission into graduate programs. Conditional admission may be granted depending on individual academic departmental policy. If English conditional admission is offered, students will need to register for English skills assessment and take instructional sessions (if required as a result of that assessment) through the University's Intensive English for Internationals (IEI) program (<http://www.memphis.edu/iei>). Upon successful completion of the requisite sessions, as determined by IEI, the student's English skills will be considered up to standard and the TOEFL/IELTS requirement may be waived depending on specific academic department policy. The student can then proceed into their graduate academic program. Please note that in order to have a complete application packet, students seeking English conditional admission will need to simultaneously apply for the IEI program through the link above and to the Graduate School ([www.memphis.edu/graduateadmissions](http://www.memphis.edu/graduateadmissions)).

Please note that a student cannot be a graduate assistant (GA) until they have been fully admitted and have begun their graduate academic program. Please review your academic program department's website and graduate catalog entries to determine if English conditional admission is offered. Questions can be directed to the program's graduate coordinator. Students will pay IEI fees until they meet the language criterion. If courses are taken outside of IEI, the student will be charged additional tuition at the regular rate.

## Retention Requirements

A student will be retained continuously in the program until completion of the degree providing the following conditions are met:

1. All students will be required to maintain a grade point average (GPA) of at least 3.00. Should the student's GPA fall below that mark, a period of one semester or one full summer term will be allowed to correct the deficiency. Failure to regain the minimum 3.00 is considered sufficient reason for being dropped from the program. This period may, at the

discretion of the student's advisory committee, be extended one additional semester or full summer term. If the GPA at the end of this extension is still below 3.00, the student will be dismissed from the program.

2. Accumulation of more than 7 semester hours of cumulative graduate coursework with a grade of "C+" or lower will result in dismissal from the program, i.e., a student who accumulates 6 hours of graduate coursework with a grade of "C+" or lower in a masters program is permitted only one additional hour with a grade of "C+" or lower.
3. All students are required to complete a comprehensive examination with at least a minimum passing score on the written portion and a satisfactory performance on the oral portion of the exam. A second and final attempt to pass this examination may be granted by the student's Advisory Committee; failure will result in mandatory dismissal from the program.
4. All students must demonstrate reportable activity and progress on their research project to their advisory committee each fall and spring semester after dissertation hours are started. This reportable activity should also be submitted in writing to the Department Chair.

Grade point averages above are based on a 4.00 grading system where A = 4.00. Students presenting transcripts using a different system will be held to similar standards.

## Graduation Requirements

**General Requirements:** Each student must earn at least 72 semester hours beyond the bachelors degree or 42 semester hours beyond the masters degree (see Table 1A). Students can apply up to 24 semester hours of dissertation credit toward these requirements. Early in each student's program of study, the Director of Graduate Studies, upon recommendation of the Departmental Chair, will approve an Advisory Committee composed of Graduate Faculty in the College. The Advisory Committee will guide the student's dissertation research and recommend coursework to support that research endeavor.

For students admitted with a bachelors degree, at least 48 of the 72 semester hours required, including dissertation and research credit, must be in the student's concentration. No more than 12 semester hours of credit for 6000 level courses will count toward the PhD degree. (See Table 1B)

For students admitted with a masters degree, at least 30 of the 42 semester hours required, including dissertation and research credit, must be in the student's concentration. No more than 6 semester hours of credit for 6000 level courses will count toward the PhD degree.

Table 1A) Doctoral Program Options

Option	Total Credit Hours	Minimum Course Hours (excluding Dissertation)	Maximum Hours of Dissertation (9000 course)
Post Bachelor's Degree (BS)	72	48	24
Post Master's Degree (MS)	42	18	24

Table 1B) Doctoral Program Course Hours

Option	Maximum course hours at the 6000 level	Minimum course hours at the 7000/8000 level	Minimum course hours at the 7000/8000 level in the concentration
Post Bachelor's Degree (BS)	12	36	24
Post Master's Degree (MS)	6	12	12

**Residency Requirements:** A minimum of 18 semester hours must be earned while the student is in continuous residence. This may be done in two regular consecutive semesters. If the student is retained as a graduate assistant, the residency requirement may be met over a single continuous twelve-month period provided the student completes 18 semester hours in two successive regular semesters. A student is not eligible to complete the residency requirement until a minimum of 18 semester hours of graduate study have been successfully completed.

**Mathematics Requirements:** Based on the qualifying examination required of all The University of Memphis doctoral students, the advisory committee may stipulate that appropriate mathematics courses be made a part of the student's program.

**Examination Requirements:** All students must take a qualifying examination in accordance with University policy outlined under Minimum Requirements for Doctoral Degrees in this catalog. This examination, which is intended to determine the student's mastery of broad fundamental concepts, will be typically given only after the student has completed between 9 to 27 semester hours of graduate study. For students entering the program with a masters degree, the exam will occur early in their PhD program as directed by the student's Advisor and Advisory Committee. The results will be used to prescribe the remainder of the student's academic program, and successful completion of the qualifying exam is required for admission to candidacy as a doctoral student.

The examination will generally be given in written form. However, the student's committee may require an oral session before making a final decision on the student's qualification to continue his/her studies.

After the final semester of coursework, the student will be required to successfully complete written and oral comprehensive examinations that will ascertain the student's mastery of the theoretical material that will underlie the dissertation topic. The student's Advisory Committee will conduct this oral comprehensive exam.

At the completion of the dissertation, the student must defend the work before the advisory committee and other interested members of the university faculty who may care to question the results of the research. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

**Course Requirements:** Nine semester hours of major mathematics, physical science and engineering principles core courses that integrate their doctoral experience are required of all doctoral students. This core is developed by the student's graduate Advisory Committee. Each concentration requires a minimum of 48 semester hours of coursework post Bachelor's Degree (and 24 post Master's Degree) plus research comprising the dissertation hours in the chosen field of study. Each student's program of study will be developed with the student's Advisory Committee. **NOTE: Students taking Engineering courses will be charged an additional \$35 per credit hour.**

## Concentration Requirements

- MECH 8341 - Engineering Analysis I **Credit Hours: (3)**
- MECH 8342 - Engineering Analysis II **Credit Hours: (3)**

## English: Writing and Language Studies, (PhD)

### PhD in English: Writing and Language Studies Degree Program

The PhD in English is designed to prepare scholars in widely recognized fields of English, as well as to prepare advanced writing specialists in the fields of business and industry. The structure of the program provides for three related concentrations (Writing, Rhetoric, and Technical Communication; Applied Linguistics; and, Literary and Cultural Studies) that offer students the professional flexibility that comes with competencies acquired through preparation in a broadly integrative discipline.

### Admission Requirements

The following are required for admission to the PhD program in English for all applicants, whether applying with a bachelor's or master's degree.

1. Fulfillment of University requirements for admission to the Graduate School.
2. Official undergraduate and graduate transcript(s) sent to Graduate Admissions.
3. A bachelor's or master's degree from an accredited college or university in the United States, usually with a major or a strong minor in English, or the equivalent of one of these degrees in another country.
4. Minimum undergraduate and graduate grade point average of 3.25 is expected.
5. Evidence of competence in writing in English as evidenced by a statement of purpose and a sample of the applicant's best work.
6. Three letters of recommendation, preferably from college/university professors of English or comparable disciplines.

**Program Admission:** We normally evaluate applicants for the PhD program once each year in March for admission in the Fall semester. Although the Graduate Studies Committee may consider the application of a promising student at other times, March 1 is the deadline by which we must receive all the application materials of anyone who wishes to be considered for an assistantship for the following academic year.

## Retention Requirements

Upon entering the PhD program, a student chooses an advisor in his or her concentration. The advisor will monitor the student's progress towards completion of the degree. Each semester, the Graduate Studies Committee will examine the academic progress of all students for retention in the program. If a student receives either two C's, one D, or one F grade in any English graduate level course, that student will be subject to review and could be dismissed from the program. In order to remain in good standing, all graduate students must maintain a 3.0 average in English Department courses. Students who are on academic probation for two consecutive semesters will not be allowed to continue in the program.

## Graduation Requirements

### General Requirements

1. A minimum of 72 hours of graduate credit beyond the bachelor's degree is required. At least 60 hours of credit must be equivalent to 7000-level coursework or higher.
2. Students entering the PhD program with a master's degree may count up to 33 hours of graduate credit toward the 72 hours needed for the PhD. Credit previously earned at another institution must be presented for evaluation not later than the end of the student's second semester of enrollment.
3. Master's level courses will be examined on an individual basis for applicability to the program. Students with a master's degree must complete at least 39 credit hours beyond that master's degree.
4. No more than 15 hours granted for dissertation work may be used to attain the required 72 hours for the PhD.

### Residency Requirements

The student must complete two successive terms full-time (excluding summer sessions) to fulfill residency requirements.

### Concentration Requirements

#### Writing, Rhetoric, and Technical Communication

PhD students pursuing a concentration in Writing, Rhetoric, and Technical Communication must complete a 12-hour breadth requirement consisting of

- ENGL 8001 - Acad Genre and Sch Pub **Credit Hours: (3)** ( Currently Textual Rhetorics)

- ENGL 8805 - Foundations of Writing Studies **Credit Hours: (3)**
- ENGL 8806 - Resch Meth In Writing **Credit Hours: (3)**
- ENGL 8350 - Rhetorical Theory **Credit Hours: (3)**

#### Additional Requirements

1. 21 additional hours of courses in Composition.
2. 12 hours of courses outside of Composition.
3. 6 hours of electives (may be taken in Composition).
4. 3 hours in ENGL 8002 - Reading for Comps .
5. 3 hours in ENGL 8900 - Engl Stds Colloquium
6. 15 Hours of Dissertation credit.
7. Competency with at least one research tool or analytic specialty, which must be directly relevant to the individual student's dissertation work and projected short-term professional goals. These tools or analytical specialties include a demonstrated level of competency in one foreign language, competency in one qualitative, quantitative, or historical research methodology, or competency with appropriate computer programs. See "Options for Fulfilling the Foreign Language Requirement," available from the department.

#### Applied Linguistics

PhD students pursuing a concentration in Applied Linguistics must complete a 12-hour breadth requirement consisting of:

- ENGL 8507 - Empirical Mthds Ling Rsrch **Credit Hours: (3)**
- ENGL 8511 - Survey of Linguistics **Credit Hours: (3)**
- ENGL 8531 - Theory/History ESL \*\* **Credit Hours: (3)**
- ENGL 8590 - Appl/Theory Linguistics **Credit Hours: (3)**
- Note: Other courses may be substituted for ENGL 8507 or ENGL 8590 with the permission of the Concentration Coordinator and the Director of Graduate Studies.

#### Additional Requirements

1. 12 additional hours of courses in Applied Linguistics.
2. 12 hours of courses outside of Applied Linguistics.
3. 12 hours of electives (may be taken in Applied Linguistics)
4. 3 hours in ENGL 8002 - Reading for Comps
5. 3 hours in ENGL 8900 - Engl Stds Colloquium .
6. 9 Hours of Dissertation credit.
7. Demonstration of a reading knowledge of two foreign languages or fluency in one foreign language. Appropriate languages must be approved by the student's advisor and the graduate coordinator as relevant to the student's course of study.

#### Literary and Cultural Studies

PhD students pursuing a concentration in Literary and Cultural Studies will choose from two different tracks, the Literature track or the Literature and Composition Studies track.

##### Literature Track

PhD students pursuing this track must complete:



1. 12-hour breadth requirement consisting of 3 hours of course work in each of the following focus areas:
  - Medieval and Early Modern Literature and Culture
  - 18th c. and 19th c. Literature and Culture
  - Modern and Contemporary Literature and Culture
  - African-American Literature and Culture
2. Focus area requirement consisting of 15 hours of course work (beyond course taken for breadth requirement) in one of the focus areas.
  - Note: Students may define an individual focus area for this requirement in consultation with advisor, with the permission of the Concentration Coordinator and the Director of Graduate Studies.
3. 9 hours in theory and methodology, including 3 hours in ENGL 8000, and 6 hours from:
  - ENGL 8336 - Afr-Amer Literary Theory
  - ENGL 8480 - Cultural Texts and Theories
  - ENGL 8701 - Hist Crit Theory
  - ENGL 8702 - Contemp Crit Theory
4. 12 hours of courses outside of main focus area (does not include courses taken for breadth requirement; may be taken in other concentrations).
5. 3 hours of electives (may be taken in Literary and Cultural Studies).
6. 3 hours in ENGL 8002 - Reading for Comps.
7. 3 hours in ENGL 8900 - Engl Stds Colloquium.
8. 15 Hours of Dissertation credit.

#### Literature and Composition Studies Track:

PhD students pursuing this track must complete:

Literature (30 hours):

1. 12-hour breadth requirement consisting of 3 hours of course work in each of the following focus areas:
  - Medieval and Early Modern Literature and Culture
  - 18th c. and 19th c. Literature and Culture
  - Modern and Contemporary Literature and Culture
  - African-American Literature and Culture
2. Focus area requirement consisting of 12 hours of course work (beyond course taken for breadth requirement) in one of the focus areas.
3. 6 hours in theory and methodology, including 3 hours in ENGL 8000.

Composition and Rhetoric (21 hours):

1. 15-hour core requirement consisting of:
  - ENGL 8001 - Acad Genre and Sch Pub
  - ENGL 8350 - Rhetorical Theory
  - ENGL 8801 - History Composition
  - ENGL 8805 - Foundations of Writing Studies
  - ENGL 8822 - Cont Comp Theory
2. 6 additional hours in WRTC
3. 3 hours in ENGL 8002 - Reading for Comps.
4. 3 hours in ENGL 8900 - Engl Stds Colloquium.
5. 15 hours of Dissertation credit.

Students in both Tracks in Literary and Cultural Studies must demonstrate a reading knowledge of one foreign language.

Appropriate language must be approved by the student's advisor and the graduate coordinator as relevant to the student's course of study.

## Examination Requirements

### Qualifying Examinations

Students entering without a master's degree in English or 30 hours of appropriate graduate work, as determined by the Graduate Coordinator, must take a qualifying examination the semester after accumulating 30 hours of graduate work through graduate transfer credit and/or graduate courses completed at The University of Memphis. Qualifying examinations are designed to ascertain that the range of knowledge is appropriate at this level. Students entering without a master's degree in English will be awarded an MA degree at the completion of the qualifying exam and 33 hours of appropriate work.

Students who pass the exam will be allowed to advance to doctoral-level study.

A student who fails one section of the qualifying examination will be given one opportunity not later than the following semester to retake that section with a different question. A student who fails more than one exam question will be given an opportunity to take a different exam no later than the following semester.

### Comprehensive Examinations

After completing the rest of their required courses, after satisfying their language and/or research requirement, and before they begin writing their dissertations, students must pass comprehensive examinations in accordance with concentration guidelines. The Ph.D. comprehensive exam committee for both the written and oral exams will consist of a minimum of four faculty members. The student will choose an advisor from his / her concentration who will be the chair of the committee.

Note: A student who fails one section of the comprehensive examination will be given one opportunity no later than the following semester to retake that section. A student who fails more than one section of the exam will be given an opportunity to take a different exam (with all new questions) no later than the following semester. A student who fails the second comprehensive exam will be dismissed from the program.

## Dissertation Requirements

### Advisory Committee

The student is responsible for choosing an advisory committee composed of at least four members of the graduate faculty best qualified to help him or her conduct research for the dissertation. If the student's research requires expertise in a discipline outside the Department of English, the student, in consultation with his or her advisory committee chair, may ask up to one faculty member outside the Department of English to be part of the committee.

### Dissertation Prospectus

When the student has passed the comprehensive examinations and has done extensive preliminary dissertation, he or she must present and defend a dissertation prospectus before the advisory committee. That defense will be open to the entire academic community. The student must give a copy of the prospectus to all committee members at least two weeks before the scheduled meeting. The advisory committee must approve the prospectus before the student may proceed with the dissertation. NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

### Defense

In consultation with the dissertation committee, the student will schedule a defense of the completed dissertation. Both the chair of the advisory committee and the candidate must ensure adequate consultation with members of the dissertation committee well in advance of the defense date.

## Epidemiology and Biostatistics, (PhD) - Biostatistics Concentration

### Doctor of Philosophy (PhD) Program

Xinhua Yu, MS, MD, PhD  
*Associate Professor and Graduate Program Coordinator*  
 305 Robison Hall  
 901.678.3433

Email: xyu2@memphis.edu

The School of Public Health at The University of Memphis offers a PhD degree in Epidemiology and Biostatistics, with a concentration in Biostatistics, the highest academic degree for individuals planning to pursue scholarly careers in this discipline. This program is designed for those who intend to teach and conduct original research utilizing rigorous scientific theories and methods, as well as be active in advocating and promoting health policies and intervention programs to improve the general health of societies.

### Program Admission

A master's degree in related health field is required for admission. Applicants must show potential for further study by having maintained a GPA of at least a 3.0 average in their master's-level coursework. The Graduate Record Examination (GRE) completed within the past five years is required. Competitive scores on the GRE are considered in the admissions decision. Applicants already holding a doctoral degree or its professional equivalent may be exempted from the GRE requirement. Other professional school standardized test scores (MCAT, DAT, or LSAT,) may be substituted for the GRE by applicants who are working toward or who have already earned post-baccalaureate degrees for example, in medicine, dentistry, management, or law.

All applicants who will be attending the University on a visa and who are not native speakers of English must supply a minimum score of 96 (80%) on the computer-based Test of English as a Foreign Language (TOEFL iBT), or an equivalent score on the paper-based test (TOEFL PBT).

Letters of recommendation from three individuals (at least one letter from a former professor or instructor) familiar with the applicant's academic background or experience in public health related issues, specifying in detail the applicant's capabilities for graduate study and for future performance as a public health scholar, are required. Applicants must also submit a personal statement of approximately 750 to 1000 words indicating his/her present interests and career goals, including how the PhD in Epidemiology will prepare the candidate to achieve these goals.

Materials submitted will be reviewed by the faculty admissions committee. Admissions decisions are made on the overall quality of the applicant's scholarship and academic ability (based on GPAs, GRE scores, undergraduate and graduate coursework completed, research conducted, and recommendations) as well as the applicant's "fit" for the program in terms of research interests and career goals.

### Program Prerequisites

All doctoral students are required to fulfill the following pre-requisites (6 credit hours) or documented equivalent coursework. These two courses will not count toward the required 54 hours of doctoral study:

- PUBH 8150 - Biostatistical Methods I **Credit Hours: (3)**
- PUBH 8170 - Epidemiology in PUBH I **Credit Hours: (3)**

### Program Requirements

## Credit Hours:

To qualify for graduation, students need to complete a minimum of 48 semester hours of graduate course work beyond the master's degree plus 6 hours of PUBH 9000 (Doctoral Dissertation), for a minimum of 54 graduate credit hours. No more than 6 hours of dissertation credits will count toward the degree.

## Transfer Credit:

Graduate School regulations must be followed regarding accepting academic credits from another institution. Courses proposed for transfer credit must meet the following two requirements. (a) The Tennessee Board of Regents requires a minimum of 750 contact minutes for each semester credit (2250 for a 3-hour course). (b) The Tennessee Conference of Graduate Schools requires a minimum of 3 hours of class work per week for 3 hours of credit. Grades earned at another institution will not be computed in the University cumulative grade point average, nor will they be accepted for transfer, unless they are "B" (3.0) or better and are from an accredited program. No credit will be transferred unless it meets with the approval of the major advisor or program graduate coordinator.

## Enrollment:

Full-time students are expected to carry a minimum of 9 credits per semester, and to devote full time during their enrollment to the pursuit of degree-related activities. Full-time students with graduate assistantships are required to enroll for 9 credits each semester. Part-time students are expected to carry a minimum of 6 credits per semester, unless permission is granted from the advisor for a reduced course load.

## Research:

All doctoral students are expected to be active in research collaboratively with members of the Division faculty each semester they are enrolled. Students may receive credit for research involvement by enrolling in PUBH 8800 - Guided Research in PUBH.

## Retention Requirements:

Students must earn a grade of B (3.0) or higher in all required courses. The PhD program will adhere to Graduate School policy regarding course grades and repetition of courses. All courses applied toward PhD degree program requirements must have the advisor's written approval.

## Residency Requirements:

The last 30 credit hours must be earned at The University of Memphis. Credit will be transferred to apply toward a doctoral program upon approval of the student's advisory committee in accordance with Graduate School policy.

## Comprehensive Examination:

Upon completion of required coursework and prior to enrolling in dissertation hours (PUBH 9000), the student must successfully complete a written and oral comprehensive exam. The exam will assess mastery of areas covered in the student's program. The content of the examination will consist of core competencies in public health, epidemiology, and biostatistics. Epidemiology and biostatistics faculty will be responsible for organizing and evaluating the comprehensive examination.

## Dissertation:

To fulfill the requirements for the PhD in Epidemiology, the student must write and defend a dissertation. The dissertation must adhere to the format outlined by the Graduate School. The dissertation topic will be determined by the student in consultation with the advisor and input from the advisory committee.

## Program Curriculum:

The Epi PhD Program is a 54 semester hour degree program. Students are required to fulfill prerequisite courses PUBH 8150 - Biostatistical Methods I, and PUBH 8170 - Epidemiology in PUBH I, or document their equivalent. Credit hours for these prerequisite courses will not count toward the 54 hours required for graduation.

### Epidemiology Research Methods Core: 9 credit hours

- PUBH 8141 - Epidemiologic Survey Method **Credit Hours: (3)**
- PUBH 8172 - Epidemiology PUBH II **Credit Hours: (3)**
- PUBH 8174 - Epidemiology PUBH III **Credit Hours: (3)**

### Biostatistics Core: 15 credit hours

- PUBH 8152 - Biostatistical Methods II **Credit Hours: (3)**
- PUBH 8310 - Mixed Model Regression Analysis **Credit Hours: (3)**
- PUBH 8311 - Appl Categorical Data Analysis \*\* **Credit Hours: (3)**
- PUBH 8309 - Appl Surv Analys in Pub Hlth **Credit Hours: (3)**
- PUBH 8190 - Adv SAS for PUBH Prof 1 **Credit Hours: (3)**

### Doctoral Seminar: 9 credit hours

- PUBH 8901 - Doctoral Professional Dev Sem **Credit Hours: (3)**
- PUBH 8192 - Intro to Human Disease for PH **Credit Hours: (3)**
- PUBH 8720 - Grant Writing in HealthScience \*\* **Credit Hours: (3)**

### Epidemiology Electives: 15 credit hours

A total of fifteen (15) credit hours is required, example courses are:

#### Public Health Electives:

- PUBH 8124 - Environmental Toxicology **Credit Hours: (3)**
- PUBH 8442 - Cancer Epidemiology **Credit Hours: (3)**
- PUBH 8443 - Infectious Disease Epidemiology **Credit Hours: (3)**
- PUBH 8140 - Epidemiology of Chronic Diseases **Credit Hours: (3)**
- PUBH 8445 - Genetic Epidemiology **Credit Hours: (3)**
- PUBH 8450 - Randomized Clinical Trials I **Credit Hours: 3**

### Dissertation: 6 credit hours

- PUBH 9000 - Dissertation **Credit Hours: (1-9)**

## Epi PhD Program Requirements

In addition to completion of the 54 semester hours of required coursework, program requirements include successful completion of written and oral comprehensive examinations, and the preparation and successful defense of a dissertation in accordance with the University of Memphis Graduate School policies and guidelines.

## Questions about the Epi PhD Program curriculum and degree requirements?

Xinhua Yu, MD, PhD, MS, Associate Professor and Coordinator  
Epidemiology Doctoral Program  
901.678.3433  
xyu2@memphis.edu

## **Epidemiology and Biostatistics, (PhD) - Epidemiology Concentration**

### Doctor of Philosophy (PhD) Program

Xinhua Yu, MS, MD, PhD  
*Associate Professor and Graduate Program Coordinator*  
305 Robison Hall  
901.678.3433

Email: [xyu2@memphis.edu](mailto:xyu2@memphis.edu)

The School of Public Health at The University of Memphis offers a PhD degree in Epidemiology and Biostatistics, the highest academic degree for individuals planning to pursue scholarly careers in this discipline. This program is designed for those who intend to teach and conduct original research utilizing rigorous scientific theories and methods, as well as be active in advocating and promoting health policies and intervention programs to improve the general health of societies.

### Program Admission

A master's degree in related health field is required for admission. Applicants must show potential for further study by having maintained a GPA of at least a 3.0 average in their master's-level coursework. The Graduate Record Examination (GRE) completed within the past five years is required. Competitive scores on the GRE are considered in the admissions decision. Applicants already holding a doctoral degree or its professional equivalent may be exempted from the GRE requirement. Other professional school standardized test scores (MCAT, DAT, or LSAT,) may be substituted for the GRE by applicants who are working toward or who have already earned post-baccalaureate degrees for example, in medicine, dentistry, management, or law.

All applicants who will be attending the University on a visa and who are not native speakers of English must supply a minimum score of 96 (80%) on the computer-based Test of English as a Foreign Language (TOEFL iBT), or an equivalent score on the paper-based test (TOEFL PBT).

Letters of recommendation from three individuals (at least one letter from a former professor or instructor) familiar with the applicant's academic background or experience in public health related issues, specifying in detail the applicant's capabilities for graduate study and for future performance as a public health scholar, are required. Applicants must also submit a personal statement of approximately 750 to 1000 words indicating his/her present interests and career goals, including how the PhD in Epidemiology will prepare the candidate to achieve these goals.

All doctoral students are expected to be active in research collaboratively with members of the Division faculty each semester they are enrolled. Students may receive credit for research involvement by enrolling in **PUBH 8800 Guided Research in PUBH**.

### Retention Requirements:

Students must earn a grade of B (3.0) or higher in all required courses. The PhD program will adhere to Graduate School policy regarding course grades and repetition of courses. All courses applied toward PhD degree program requirements must have the advisor's written approval.

### Residency Requirements:

The last 30 credit hours must be earned at The University of Memphis. Credit will be transferred to apply toward a doctoral program upon approval of the student's advisory committee in accordance with Graduate School policy.

### Comprehensive Examination:

Upon completion of required coursework and prior to enrolling in dissertation hours (**PUBH 9000**), the student must successfully complete a written and oral comprehensive exam. The exam will assess mastery of areas covered in the student's program. The content of the examination will consist of core competencies in public health, epidemiology, and biostatistics. Epidemiology and biostatistics faculty will be responsible for organizing and evaluating the comprehensive examination.

### Dissertation:

To fulfill the requirements for the PhD in Epidemiology, the student must write and defend a dissertation. The dissertation must adhere to the format outlined by the Graduate School. The dissertation topic will be determined by the student in consultation with the advisor and input from the advisory committee.

### Program Curriculum:

The Epi PhD Program is a 54 semester hour degree program. Students are required to fulfill prerequisite courses **PUBH 8150 Biostatistical Methods I**, and **PUBH 8170 Epidemiology in PUBH I**, or document their equivalent. Credit hours for these prerequisite courses will not count toward the 54 hours required for graduation.

### Epidemiology Research Methods Core: 9 credit hours

- PUBH 8141 - Epidemiologic Survey Method **Credit Hours: (3)**
- PUBH 8172 - Epidemiology PUBH II **Credit Hours: (3)**
- PUBH 8174 - Epidemiology PUBH III **Credit Hours: (3)**

### Biostatistics Core: 15 credit hours

- PUBH 8152 - Biostatistical Methods II **Credit Hours: (3)**
- PUBH 8309 - Appl Surv Analys in Pub Hlth **Credit Hours: (3)**
- PUBH 8310 - Mixed Model Regression Analys **Credit Hours: (3)**
- PUBH 8311 - Appl Categorical Data Analys \*\* **Credit Hours: (3)**
- PUBH 8190 - Adv SAS for PUBH Prof 1 **Credit Hours: (3)**

## Doctoral Seminar: 9 credit hours

- PUBH 8901 - Doctoral Professional Dev Sem Credit Hours: (3)
- PUBH 8192 - Intro to Human Disease for PH Credit Hours: (3)
- PUBH 8720 - Grant Writing in HealthScience \*\* Credit Hours: (3)

## Epidemiology Electives: 15 credit hours

### Public Health Electives:

- PUBH 8124 - Environmental Toxicology Credit Hours: (3)
- PUBH 8140 - Epidemiology of Chronic Diseases Credit Hours: (3)
- PUBH 8442 - Cancer Epidemiology Credit Hours: (3)
- PUBH 8443 - Infectious Disease Epidemiology Credit Hours: (3)
- PUBH 8445 - Genetic Epidemiology Credit Hours: (3)
- PUBH 8450 - Randomized Clinical Trials I Credit Hours: 3

## Dissertation: 6 credit hours

- PUBH 9000 - Dissertation Credit Hours: (1-9)

## Epi PhD Program Requirements

### Questions about the Epi PhD Program curriculum and degree requirements?

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 Epidemiology Doctoral Program  
 901.678.3433  
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## Higher and Adult Education, (EdD)

### Doctor of Education (EdD)

Program objectives of the EdD in Higher and Adult Education (HIAD) include the (1) development of skills in higher education leadership, (2) development of research skills relevant to data analysis (qualitative and quantitative) and the relationship of data to organizational effectiveness; and (3) garner knowledge and understanding within a concentration area.

### Program Admission

Each applicant must submit a completed application to the Graduate School that includes:

1. Official transcripts for all prior undergraduate and graduate courses
2. Professional resume
3. Two - three page statement of academic and professional goals



4. Three letters of recommendation
5. The admission decision will be based on a holistic profile that includes information contained in the completed application packet described above. Interested applicants are encouraged to contact the departmental office to obtain more information about the HIAD program. The deadline for submission of all application materials is April 1 for the fall semester and November 1 for the spring semester.

## Program Requirements

A minimum of 54 semester hours beyond the master's degree, including 24 hours of core courses, 21 hours of courses within the student's concentration (15 hours of approved courses and 6 hours of electives), and 9 hours of dissertation (LEAD 9000). Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write the dissertation.

### Core Courses (24 hours)

- LEAD 8500 - Adult Lrng/Leadership \*\* Credit Hours: (3)
- LEAD 8001 - Educ Ldrshp In Orgntns \*\* Credit Hours: (3)
- LEAD 8003 - Policy-Oriented Rsrch \*\* Credit Hours: (3)
- HIAD 8403 - Rsrch Hghr/Adult Educ \*\* Credit Hours: (3)
- HIAD 8541 - Issues/Trends Tchg Adults \*\* Credit Hours: (3)
- EDPR 8541 - Stat Meth App Ed I \*\* Credit Hours: (3)
- EDPR 8561 - Qualitative Mthds Educ \*\* Credit Hours: (3)
- EDPR 8542 - Statistical Methods Applied to Education II Credit Hours: (3) or EDPR 8565 - Qual Methods and Analysis \*\*

### Higher Education Concentration Courses (21 hours)

- HIAD 8401 - Higher Educ Adminstratn \*\* Credit Hours: (3)
- HIAD 8410 - Overview Higher Edu \*\* Credit Hours: (3)
- HIAD 8412 - Hist/Policy Persp Hied Credit Hours: (3)
- HIAD 8420 - Legal/Ethical Issues in HIAD \*\* Credit Hours: (3)
- HIAD 8422 - Higher Educ Finance \*\* Credit Hours: (3)  
6 elective hours approved by the student's advisor

### Adult Education Concentration Courses (21 hours):

- HIAD 8510 - Overview of Adult Educ \*\* Credit Hours: (3)
- HIAD 8530 - Continuing Prof Educ \*\* Credit Hours: (3)
- HIAD 8542 - Global/Compartv Issues Ldrshp \*\* Credit Hours: (3)
- HIAD 8415 - IT Trends & Issues \*\* Credit Hours: (3)
- LEAD 7100 - Education & Community \*\* Credit Hours: (3)  
6 elective hours approved by the student's advisor

## History - Ancient Egyptian History Concentration, (PhD)

### PhD Degree Program

The Department of History offers a program of study leading to the PhD degree. The program is designed to provide wide knowledge in two fields, more intensive preparation in a third field, and professional competence in original research and writing that will prepare the student for teaching and research in higher education or for a career in government, business, library service, and other research-related fields.

## Program Admission

In making our decisions on admission we consider multiple factors, including transcripts and GPA, the nature of your coursework, recommendations, your writing sample and statement, the compatibility of our program with your interests, and availability of faculty to supervise your major field.

Applicants will need a BA in history with at least a 3.25 GPA (on a 4.0 scale) from an accredited institution, a BA in a related field, or an MA in history or a related field that we judge to be sufficient preparation for our PhD program.

Students already holding an MA in history or in a related field may transfer up to 33 credits from their MA degree towards the PhD. Transfer credits are evaluated and accepted at the discretion of the Coordinator of Graduate Studies and the advisory committee.

In addition to submitting your application and all transcripts to the Graduate School, you should submit the following to the History Department:

1. A 750-1000 word "Statement of Purpose," in which you explain your educational goals, anticipated fields of study, and general research interests. In this statement, we expect you to demonstrate some familiarity with the history department's program and faculty.
2. Three letters of recommendation commenting on your academic ability and suitability for PhD work.
3. A writing sample, consisting either of a MA thesis or a paper written for a graduate course in history (preferred) or a related field.

As part of the admission process, the Graduate Admissions Committee will seek input from department members in the applicant's field of interest.

## Advising

The Coordinator of Graduate Studies will advise students when they first enroll. During the first school year enrolled, and whenever possible within the first semester, each student will choose an advisory committee. In most cases, the advisory committee will be composed of a professor with full graduate faculty rank from the major field who is designated as the advisor and two other faculty members (one from each minor field). At the advisor's discretion, the committee may include two professors from the major field. The advisory committee assists the student in determining such matters as fields of study, the choice of courses, acceptance of transfer credit, and acceptance of credit from the master's degree. The committee provides all of its decisions in writing with copies to the student and to the Coordinator of Graduate Studies.

## Foreign Language

All students whose major field is not in U.S. history must demonstrate reading proficiency in one foreign language, whenever possible one directly related to the dissertation field. Proficiency consists of acceptably translating a selection from a historical work or source. The advisory committee may require the student to demonstrate reading knowledge in two or more foreign languages. It will be up to the advisory committee to determine whether students in U.S. history must demonstrate proficiency in a foreign language.

## Fields of Study

1. The student will choose, in consultation with the advisor, three fields of study, one of which will be designated the dissertation field. One of the two minor fields can be complementary to the dissertation field; the second minor field must be distinct geographically, chronologically, and/or thematically from the major field.
  - The advisory committee will consult with the student and determine what and how many courses will be required in each field.
  - The student must take near the end of coursework 3 credit hours of "Reading for and Writing Comprehensives" (HIST 8990) in each field, each of which is devoted to intensive individual study of the historiography of the field as a whole, compiling a bibliography of the important literature, gaining familiarity with the key debates, and writing the comprehensive examinations. No more than these 9 credits of "Reading for and Writing Comprehensives" may count toward the degree.
2. Dissertation Fields
  - United States before 1877
  - United States after 1877
  - Ancient World; normally a dissertation in Ancient History must be in the area of Egyptology.
  - Modern Europe
  - African American History
  - Women and Gender History
  - Global History
3. Minor fields (in addition to the above)
  - Medieval-Renaissance Europe
  - Early Modern Europe
  - Latin America
  - Africa
  - East Asia
  - Russia
  - Middle East
4. As noted above, the primary focus of at least one minor field must be geographically, chronologically, and/or thematically distinct from the major field. With that restriction, a student may petition the Graduate Studies Committee for a field or fields not listed in the official list if the prospective field advisor agrees and the student's advisory committee approves.
5. Furthermore, the student's major field may be subdivided into two separate fields if it embraces separate regions or is conventionally divided into separate fields (such as Ancient or Medieval-Renaissance).
6. With the approval of the Graduate Studies Committee, one field may be taken in another department or may be interdisciplinary, including courses from at least two departments.
7. Upon approval of a petition to the Graduate Studies Committee from both the student and a prospective dissertation director, a dissertation may be completed in a field that is not normally a dissertation field.

## Concentration in Ancient Egyptian History

(**Note:** "Concentration" refers to a specific program in this area. It does not imply that this is our only area of specialization.)

We expect students choosing this concentration to deepen their proficiency in Middle Egyptian and they must have a reading knowledge of French and German before they may take research seminars or write the dissertation. Admission into the graduate program in history does not automatically ensure admission into this concentration. The approval of the department's Egyptologists is also necessary, so students should contact them directly.

## Course Requirements

A minimum of 60 semester hours

A minimum of 60 semester hours of graduate course work beyond the bachelor's degree plus 12 hours of HIST 9000 - Doctoral Dissertation, for a minimum total of 72 graduate credits. No more than 12 hours of dissertation credits will be counted toward the degree.

## The last 30 hours of course work

The last 30 hours of course work (including 12 dissertation hours) must be from The University of Memphis.

## Core requirements:

All PhD students are required to take 3 credit hours of research seminar (HIST 8070, one 7/8000-level course in the historiography of the major field and HIST 7011 - Phil & Theory of History/HIST 8011 - Phil & Theory of History. We recommend, but do not require, HIST 7100 - Global Historiography/ HIST 8100 - Global Historiography and historiography courses in the minor fields; however, the advisory committee may require them. Whenever possible, students should take all the core courses in the first year.

- HIST 8070 - Research Seminar **Credit Hours: (1-3)**
- HIST 7011 - Phil & Theory of History **Credit Hours: (3)**
- HIST 8011 - Phil & Theory of History **Credit Hours: (3)**
- HIST 7100 - Global Historiography **Credit Hours: (3)**
- HIST 8100 - Global Historiography **Credit Hours: (3)**

## At most 6 credit hours

At most 6 credit hours of HIST 8012 - Directed Readings, with an additional 6 hours permitted in special circumstances by petition to the Graduate Coordinator.

- HIST 8012 - Directed Readings **Credit Hours: (1-3)**

## At most 6 credits of

At most 6 credits of MA courses and 6 credits of PhD courses at the 6000-level. In special cases, the advisory committee may allow a total of 15 credits at the 6000-level.

## With the approval of the advisory committee

With the approval of the advisory committee, up to 33 hours of course work from the master's degree, as well as any other graduate coursework completed before admission to the PhD program, may be counted toward the 60 credits.

## A student who makes a grade of B- or lower in 6 or more hours of course work

A student who makes a grade of B- or lower in 6 or more hours of course work will be dropped from the PhD program, except under exceptional circumstances. No grade of C+ or lower may count toward the required number of credits.

## The following courses do not count toward the degree:

### Comprehensive Examination

The Advisory Committee will review the progress of each full-time Ph.D. student at the end of both the first and second year, and will give their findings to each student in writing. Full-time PhD students with a history MA are expected to pass their Comprehensive Examination in the fourth or fifth semester in the PhD program, and in any case within six months of finishing the required coursework.

Since the examination is designed to test knowledge of each field, it is not confined to material covered in classes and the books and articles read in them. We expect students to demonstrate an intellectual command of the subject matter, historiography, current scholarly controversies, bibliography, and whatever else is expected in each field. While reading lists for exams will vary in length and content, in most cases they will include at least 30–50 monographs in minor fields and 60–100 in the major field, or the equivalent in major articles.

Preparation for the Comprehensive Examination should begin with the first PhD class, and, for MA students anticipating continuing in the PhD program, with the first graduate class. See the departmental Guide for Graduate Students for a complete description of the exam.

The Advisory Committee will review the progress of each full-time Ph.D. student at the end of both the first and second year, and will give their findings to each student in writing. Full-time PhD students with a history MA are expected to pass their Comprehensive Examination in the fourth or fifth semester in the PhD program, and in any case within six months of finishing the required coursework.

Since the examination is designed to test knowledge of each field, it is not confined to material covered in classes and the books and articles read in them. We expect students to demonstrate an intellectual command of the subject matter, historiography, current scholarly controversies, bibliography, and whatever else is expected in each field. While reading lists for exams will vary in length and content, in most cases they will include at least 30–50 monographs in minor fields and 60–100 in the major field, or the equivalent in major articles.

Preparation for the Comprehensive Examination should begin with the first PhD class, and, for MA students anticipating continuing in the PhD program, with the first graduate class. See the departmental Guide for Graduate Students for a complete description of the exam.

Before scheduling the Reading for and Writing Comprehensives courses, the student must choose, in consultation with the advisory committee and with the approval of the Graduate Studies Committee, a Comprehensive Committee composed of three or four faculty members: one from each minor field and one or two from the dissertation field. Usually, this is the same as the advisory committee.

No sooner than the last semester of course work, in which the student will normally take only Reading for and Writing Comprehensives classes, and after satisfying the language requirement, if any, the Comprehensive Committee will administer a Comprehensive Examination over all fields. The committee, in consultation with the student, will decide whether the exam essays should be written simultaneously or not and may decide to spread them over not more than two semesters.

The written portion of the exam consists of essays of about thirty-pages length in each minor field and one or two essays totally approximately sixty pages in the major field. Students and field advisors will work out the format of these essays, based upon the nature of the field, the content of their coursework, and the reading lists and bibliographies developed for the Readings courses. The essays will be based on a series of broad questions and, in many fields, be historiographical in nature. They will draw from, but not be a mere compilation of, the written documents, described in the departmental Guide to be done in each previous course.

After a student has completed all written parts of the Comprehensive Examination, the Comprehensive Committee will conduct an oral examination over all the fields, normally within two weeks, but if necessary the Comprehensive Committee may extend the time. After the oral exam, the committee will either pass the student or require the resubmitting of one or more written parts. After the student has resubmitted any required exams, the committee may choose to hold another oral examination, but it is not required to do so.

The student may not resubmit any written examination, which will necessarily involve a major reconceptualization and revision of an essay, sooner than one full semester after the first attempt. After the student has retaken all required parts, including a second oral examination, if required, the Comprehensive Committee will decide whether, with the approval of at least three of the four members, the student should be promoted to late doctoral status or dropped from the program. Upon successful completion

of the Comprehensive Examination, the coordinator of graduate studies will notify the Graduate School of the student's late doctoral status. The student may enroll in dissertation hours only after passing the Comprehensive Examination.

## Dissertation

To complete the requirements for the PhD in History, the student must prepare a dissertation based on a substantial amount of original research and submitted in the acceptable form. The student determines the dissertation topic in consultation with a faculty member in the dissertation field who agrees to direct the research. NOTE: Students electing to write a dissertation should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

Each PhD student must, within one semester after passing the Comprehensive Examination, present a prospectus of the proposed dissertation in a colloquy supervised by the Dissertation Committee. All history faculty and graduate students are invited to this colloquy, and all other interested persons are welcome. This is not intended as an examination, but rather as a forum in which the candidate can discuss ideas and receive suggestions and criticisms.

The Dissertation Committee consists of at least four graduate faculty, chaired by the director, who, with at least two other members, must have full graduate faculty status. It is recommended that one member be outside the discipline, department, or university. Prospective committee members not on the University of Memphis faculty must apply for Adjunct Graduate Faculty status. All graduate committees, including this one, should normally consist of tenured and tenure-track faculty. Other instructors at University of Memphis, untenured or non-tenure track instructors from other institutions, and unaffiliated scholars, with appropriate graduate faculty status may serve, but only with the approval of the committee chair and by a formal petition to the Graduate Studies Committee providing a full explanation of the reasons for the request. The Coordinator of Graduate Studies may waive the departmental requirement that three of the four members hold Full Graduate Faculty membership when an Adjunct/Affiliate member's credentials warrant it. In these instances, only two of the departmental faculty members will be required to hold full Graduate Faculty membership. Only one adjunct or affiliate graduate faculty member may serve as a voting member; the director must hold full membership.

Formal approval of the final dissertation will be given by the Dissertation Committee and the Graduate Studies Committee.

## History, (PhD)

### PhD Degree Program

The Department of History offers a program of study leading to the PhD degree. The program is designed to provide wide knowledge in two fields, more intensive preparation in a third field, and professional competence in original research and writing that will prepare the student for teaching and research in higher education or for a career in government, business, library service, and other research-related fields.

### Program Admission

In making our decisions on admission we consider multiple factors, including transcripts and GPA, the nature of your coursework, recommendations, your writing sample and statement, the compatibility of our program with your interests, and availability of faculty to supervise your major field.

Applicants will need a BA in history with at least a 3.25 GPA (on a 4.0 scale) from an accredited institution, a BA in a related field, or an MA in history or a related field that we judge to be sufficient preparation for our PhD program.

Students already holding an MA in history or in a related field may transfer up to 33 credits from their MA degree towards the PhD. Transfer credits are evaluated and accepted at the discretion of the Coordinator of Graduate Studies and the advisory committee.

In addition to submitting your application and all transcripts to the Graduate School, you should submit the following to the History Department:

1. A 750-1000 word "Statement of Purpose," in which you explain your educational goals, anticipated fields of study, and general research interests. In this statement, we expect you to demonstrate some familiarity with the history department's program and faculty.
2. Three letters of recommendation commenting on your academic ability and suitability for PhD work.
3. A writing sample, consisting either of a MA thesis or a paper written for a graduate course in history (preferred) or a related field.

As part of the admission process, the Graduate Admissions Committee will seek input from department members in the applicant's field of interest.

## Advising

The Coordinator of Graduate Studies will advise students when they first enroll. During the first school year enrolled, and whenever possible within the first semester, each student will choose an advisory committee. In most cases, the advisory committee will be composed of a professor with full graduate faculty rank from the major field who is designated as the advisor and two other faculty members (one from each minor field). At the advisor's discretion, the committee may include two professors from the major field. The advisory committee assists the student in determining such matters as fields of study, the choice of courses, acceptance of transfer credit, and acceptance of credit from the master's degree. The committee provides all of its decisions in writing with copies to the student and to the Coordinator of Graduate Studies.

## Foreign Language

All students whose major field is not in U.S. history must demonstrate reading proficiency in one foreign language, whenever possible one directly related to the dissertation field. Proficiency consists of acceptably translating a selection from a historical work or source. The advisory committee may require the student to demonstrate reading knowledge in two or more foreign languages. It will be up to the advisory committee to determine whether students in U.S. history must demonstrate proficiency in a foreign language.

## Fields of Study

1. The student will choose, in consultation with the advisor, three fields of study, one of which will be designated the dissertation field. One of the two minor fields can be complementary to the dissertation field; the second minor field must be distinct geographically, chronologically, and/or thematically from the major field.
  - The advisory committee will consult with the student and determine what and how many courses will be required in each field.
  - The student must take near the end of coursework 3 credit hours of "Reading for and Writing Comprehensives" (HIST 8990) in each field, each of which is devoted to intensive individual study of the historiography of the field as a whole, compiling a bibliography of the important literature, gaining familiarity with the key debates, and writing the comprehensive examinations. No more than these 9 credits of "Reading for and Writing Comprehensives" may count toward the degree.
2. Dissertation Fields
  - United States before 1877
  - United States after 1877
  - Ancient World; normally a dissertation in Ancient History must be in the area of Egyptology.
  - Modern Europe
  - African American History
  - Women and Gender History
  - Global History
3. Minor fields (in addition to the above)
  - Medieval-Renaissance Europe

- Early Modern Europe
  - Latin America
  - Africa
  - East Asia
  - Russia
  - Middle East
4. As noted above, the primary focus of at least one minor field must be geographically, chronologically, and/or thematically distinct from the major field. With that restriction, a student may petition the Graduate Studies Committee for a field or fields not listed in the official list if the prospective field advisor agrees and the student's advisory committee approves.
  5. Furthermore, the student's major field may be subdivided into two separate fields if it embraces separate regions or is conventionally divided into separate fields (such as Ancient or Medieval-Renaissance).
  6. With the approval of the Graduate Studies Committee, one field may be taken in another department or may be interdisciplinary, including courses from at least two departments.
  7. Upon approval of a petition to the Graduate Studies Committee from both the student and a prospective dissertation director, a dissertation may be completed in a field that is not normally a dissertation field.

## Course Requirements

### A minimum of 60 semester hours

A minimum of 60 semester hours of graduate course work beyond the bachelor's degree plus 12 hours of HIST 9000 - Doctoral Dissertation, for a minimum total of 72 graduate credits. No more than 12 hours of dissertation credits will be counted toward the degree.

### The last 30 hours of course work

The last 30 hours of course work (including 12 dissertation hours) must be from The University of Memphis.

### Core requirements:

All PhD students are required to take 3 credit hours of research seminar (HIST 8070, one 7/8000-level course in the historiography of the major field and HIST 7011 - Phil & Theory of History/HIST 8011 - Phil & Theory of History. We recommend, but do not require, HIST 7100 - Global Historiography/ HIST 8100 - Global Historiography and historiography courses in the minor fields; however, the advisory committee may require them. Whenever possible, students should take all the core courses in the first year.

- HIST 8070 - Research Seminar **Credit Hours: (1-3)**
- HIST 7011 - Phil & Theory of History **Credit Hours: (3)**
- HIST 8011 - Phil & Theory of History **Credit Hours: (3)**
- HIST 7100 - Global Historiography **Credit Hours: (3)**
- HIST 8100 - Global Historiography **Credit Hours: (3)**

### At most 6 credit hours

At most 6 credit hours of HIST 8012 - Directed Readings, with an additional 6 hours permitted in special circumstances by petition to the Graduate Coordinator.



- HIST 8012 - Directed Readings **Credit Hours: (1-3)**

## At most 6 credits of

At most 6 credits of MA courses and 6 credits of PhD courses at the 6000-level. In special cases, the advisory committee may allow a total of 15 credits at the 6000-level.

## With the approval of the advisory committee

With the approval of the advisory committee, up to 33 hours of course work from the master's degree, as well as any other graduate coursework completed before admission to the PhD program, may be counted toward the 60 credits.

## A student who makes a grade of B- or lower in 6 or more hours of course work

A student who makes a grade of B- or lower in 6 or more hours of course work will be dropped from the PhD program, except under exceptional circumstances. No grade of C+ or lower may count toward the required number of credits.

## The following courses do not count toward the degree:

### Comprehensive Examination

The Advisory Committee will review the progress of each full-time Ph.D. student at the end of both the first and second year, and will give their findings to each student in writing. Full-time PhD students with a history MA are expected to pass their Comprehensive Examination in the fourth or fifth semester in the PhD program, and in any case within six months of finishing the required coursework.

Since the examination is designed to test knowledge of each field, it is not confined to material covered in classes and the books and articles read in them. We expect students to demonstrate an intellectual command of the subject matter, historiography, current scholarly controversies, bibliography, and whatever else is expected in each field. While reading lists for exams will vary in length and content, in most cases they will include at least 30–50 monographs in minor fields and 60–100 in the major field, or the equivalent in major articles.

Preparation for the Comprehensive Examination should begin with the first PhD class, and, for MA students anticipating continuing in the PhD program, with the first graduate class. See the departmental Guide for Graduate Students for a complete description of the exam.

The Advisory Committee will review the progress of each full-time Ph.D. student at the end of both the first and second year, and will give their findings to each student in writing. Full-time PhD students with a history MA are expected to pass their Comprehensive Examination in the fourth or fifth semester in the PhD program, and in any case within six months of finishing the required coursework.

Since the examination is designed to test knowledge of each field, it is not confined to material covered in classes and the books and articles read in them. We expect students to demonstrate an intellectual command of the subject matter, historiography, current scholarly controversies, bibliography, and whatever else is expected in each field. While reading lists for exams will vary in length and content, in most cases they will include at least 30–50 monographs in minor fields and 60–100 in the major field, or the equivalent in major articles.

Preparation for the Comprehensive Examination should begin with the first PhD class, and, for MA students anticipating continuing in the PhD program, with the first graduate class. See the departmental Guide for Graduate Students for a complete description of the exam.

Before scheduling the Reading for and Writing Comprehensives courses, the student must choose, in consultation with the advisory committee and with the approval of the Graduate Studies Committee, a Comprehensive Committee composed of three or four faculty members: one from each minor field and one or two from the dissertation field. Usually, this is the same as the advisory committee.

No sooner than the last semester of course work, in which the student will normally take only Reading for and Writing Comprehensives classes, and after satisfying the language requirement, if any, the Comprehensive Committee will administer a Comprehensive Examination over all fields. The committee, in consultation with the student, will decide whether the exam essays should be written simultaneously or not and may decide to spread them over not more than two semesters.

The written portion of the exam consists of essays of about thirty-pages length in each minor field and one or two essays totally approximately sixty pages in the major field. Students and field advisors will work out the format of these essays, based upon the nature of the field, the content of their coursework, and the reading lists and bibliographies developed for the Readings courses. The essays will be based on a series of broad questions and, in many fields, be historiographical in nature. They will draw from, but not be a mere compilation of, the written documents, described in the departmental Guide to be done in each previous course.

After a student has completed all written parts of the Comprehensive Examination, the Comprehensive Committee will conduct an oral examination over all the fields, normally within two weeks, but if necessary the Comprehensive Committee may extend the time. After the oral exam, the committee will either pass the student or require the resubmitting of one or more written parts. After the student has resubmitted any required exams, the committee may choose to hold another oral examination, but it is not required to do so.

The student may not resubmit any written examination, which will necessarily involve a major reconceptualization and revision of an essay, sooner than one full semester after the first attempt. After the student has retaken all required parts, including a second oral examination, if required, the Comprehensive Committee will decide whether, with the approval of at least three of the four members, the student should be promoted to late doctoral status or dropped from the program. Upon successful completion of the Comprehensive Examination, the coordinator of graduate studies will notify the Graduate School of the student's late doctoral status. The student may enroll in dissertation hours only after passing the Comprehensive Examination.

## Dissertation

To complete the requirements for the PhD in History, the student must prepare a dissertation based on a substantial amount of original research and submitted in the acceptable form. The student determines the dissertation topic in consultation with a faculty member in the dissertation field who agrees to direct the research. NOTE: Students electing to write a dissertation should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

Each PhD student must, within one semester after passing the Comprehensive Examination, present a prospectus of the proposed dissertation in a colloquy supervised by the Dissertation Committee. All history faculty and graduate students are invited to this colloquy, and all other interested persons are welcome. This is not intended as an examination, but rather as a forum in which the candidate can discuss ideas and receive suggestions and criticisms.

The Dissertation Committee consists of at least four graduate faculty, chaired by the director, who, with at least two other members, must have full graduate faculty status. It is recommended that one member be outside the discipline, department, or university. Prospective committee members not on the University of Memphis faculty must apply for Adjunct Graduate Faculty status. All graduate committees, including this one, should normally consist of tenured and tenure-track faculty. Other instructors at University of Memphis, untenured or non-tenure track instructors from other institutions, and unaffiliated scholars, with appropriate graduate faculty status may serve, but only with the approval of the committee chair and by a formal petition to the Graduate Studies Committee providing a full explanation of the reasons for the request. The Coordinator of Graduate Studies may waive the departmental requirement that three of the four members hold Full Graduate Faculty membership when an Adjunct/Affiliate member's credentials warrant it. In these instances, only two of the departmental faculty members will be required to hold full Graduate Faculty membership. Only one adjunct or affiliate graduate faculty member may serve as a voting member; the director must hold full membership.

Formal approval of the final dissertation will be given by the Dissertation Committee and the Graduate Studies Committee.

# Instruction and Curriculum Leadership - Applied Behavior Analysis, (EdD)

## EdD Degree Program

The primary purposes of the doctoral programs in the Department of Instruction and Curriculum Leadership are to prepare candidates for positions as teacher educators and researchers in colleges and universities; or, to produce experts in research and development who can lead initiatives to analyze, implement, and evaluate instructional materials and learning environments.

## Program Admission

Admission to the Graduate School and admission to a specific ICL graduate program are separate procedures. Applicants must submit the following admissions information:

- Application to the Graduate School that includes:
  1. Official Graduate Record Examination (GRE) score (verbal, quantitative, and writing)
  2. Official transcripts of undergraduate and graduate study
  3. Applicants who are not native speakers of English and are not graduates of The University of Memphis must supply a minimum score of 550 on the paper, a 210 on the computer-based, or 79 on the internet based Test of English as a Foreign Language (TOEFL).
- Application to the program in the Department of Instruction and Curriculum Leadership (departmental applications can be obtained via the ICL web site ([http://www.memphis.edu/icl/docs/edd\\_application\\_pc.docx](http://www.memphis.edu/icl/docs/edd_application_pc.docx)) that includes:
  1. Two letters of recommendation from people familiar with the applicant's academic background and aptitude for graduate work, specifying in detail the applicant's capabilities for doctoral study and for future performance and scholarship. At least one letter from a college/university professor is preferred.
  2. A written statement of 500 to 1000 words (maximum) indicating the intended area of focus in the doctoral program and the applicant's present interests and career goals.
  3. Interviews with two faculty members (one from the student's area of interest) that must be completed prior to the College deadlines. The doctoral application file must be completed before an interview will be scheduled. Submit the Department of Instruction and Curriculum Leadership application to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave, Memphis, TN 38152).
- Each student's file will be evaluated prior to full admission to the Department of Instruction and Curriculum Leadership. Only those files that are completed by the admission deadline will be considered. All application information must be received by February 1 for summer semesters, April 1 for fall semesters, and October 1 for the spring semester with the exception of applications for the EdD in the Instructional Design and Technology (IDT) program area, which has a summer admission only with a February 15 deadline.
- The above criteria represent the minimum acceptable admission requirements. Depending on the applicant's educational background, the graduate committee may require additional coursework to prepare the student for doctoral studies.

## Program Requirements

1. A minimum total of 54 post-master's hours.

2. The major will consist of 42-45 hours, including the department core requirements: ICL 8200 - Prof Sem/Doctoral Stdnt, ICL 8005 - The Nature of Knowledge, 9-12 hours of dissertation credit (ICL 9000), and 3-6 hours of Research Residency Seminar (ICL 8995). A maximum of 15 hours for ICL 8995 and ICL 9000 will be credited toward the degree.
  - NOTE: Students must adhere to the Thesis/Dissertation Preparation Guide when writing their dissertation.
  - (This does not apply to IDT whose doctoral students are expected to follow the program of study for the IDT major concentration.)
  - (This does not apply to students in SPED with an emphasis in Applied Behavior Analysis whose doctoral students are expected to follow the program of study identified in collaboration with their advisor.)
3. The research requirement for ICL will consist of 9-12 hours which includes EDPR 8541, EDPR 8561, and 3 - 6 additional elective research hours in consultation with advisor. The elective research hours should consist of courses directed toward research and/or statistical techniques and procedures necessary for the discipline and the dissertation topic.
  - (This does not apply to IDT whose doctoral students are expected to follow the program of study for the IDT major concentration.)
4. Approved transfer credit or post-master's courses may be accepted for not more than 12 semester hours.
5. Completion of the college residency requirements.

Additional information pertaining to the major and concentration areas may be secured from the Chair or Graduate Coordinator of the Department of Instruction and Curriculum Leadership.

## **Instruction and Curriculum Leadership - Early Childhood Education, (EdD)**

### **EdD Degree Program**

The primary purposes of the doctoral programs in the Department of Instruction and Curriculum Leadership are to prepare candidates for positions as teacher educators and researchers in colleges and universities; or, to produce experts in research and development who can lead initiatives to analyze, implement, and evaluate instructional materials and learning environments.

### **Program Admission**

Admission to the Graduate School and admission to a specific ICL graduate program are separate procedures. Applicants must submit the following admissions information:

- Application to the Graduate School that includes:
  1. Official Graduate Record Examination (GRE) score (verbal, quantitative, and writing)
  2. Official transcripts of undergraduate and graduate study
  3. Applicants who are not native speakers of English and are not graduates of The University of Memphis must supply a minimum score of 550 on the paper, a 210 on the computer-based, or 79 on the internet based Test of English as a Foreign Language (TOEFL).
- Application to the program in the Department of Instruction and Curriculum Leadership (departmental applications can be obtained via the ICL web site ([http://www.memphis.edu/icl/docs/edd\\_application\\_pc.docx](http://www.memphis.edu/icl/docs/edd_application_pc.docx)) that includes:

1. Two letters of recommendation from people familiar with the applicant's academic background and aptitude for graduate work, specifying in detail the applicant's capabilities for doctoral study and for future performance and scholarship. At least one letter from a college/university professor is preferred.
  2. A written statement of 500 to 1000 words (maximum) indicating the intended area of focus in the doctoral program and the applicant's present interests and career goals.
  3. Interviews with two faculty members (one from the student's area of interest) that must be completed prior to the College deadlines. The doctoral application file must be completed before an interview will be scheduled. Submit the Department of Instruction and Curriculum Leadership application to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave, Memphis, TN 38152).
- Each student's file will be evaluated prior to full admission to the Department of Instruction and Curriculum Leadership. Only those files that are completed by the admission deadline will be considered. All application information must be received by February 1 for summer semesters, April 1 for fall semesters, and October 1 for the spring semester with the exception of applications for the EdD in the Instructional Design and Technology (IDT) program area, which has a summer admission only with a February 15 deadline.
  - The above criteria represent the minimum acceptable admission requirements. Depending on the applicant's educational background, the graduate committee may require additional coursework to prepare the student for doctoral studies.

## Program Requirements

1. A minimum total of 54 post-master's hours.
2. The major will consist of 42-45 hours, including the department core requirements: ICL 8200 - Prof Sem/Doctoral Stdnt, ICL 8005 - The Nature of Knowledge, 9-12 hours of dissertation credit (ICL 9000), and 3-6 hours of Research Residency Seminar (ICL 8995). A maximum of 15 hours for ICL 8995 and ICL 9000 will be credited toward the degree.
  - NOTE: Students must adhere to the Thesis/Dissertation Preparation Guide when writing their dissertation.
  - (This does not apply to IDT whose doctoral students are expected to follow the program of study for the IDT major concentration.)
  - (This does not apply to students in SPED with an emphasis in Applied Behavior Analysis whose doctoral students are expected to follow the program of study identified in collaboration with their advisor.)
3. The research requirement for ICL will consist of 9-12 hours which includes EDPR 8541, EDPR 8561, and 3 - 6 additional elective research hours in consultation with advisor. The elective research hours should consist of courses directed toward research and/or statistical techniques and procedures necessary for the discipline and the dissertation topic.
  - (This does not apply to IDT whose doctoral students are expected to follow the program of study for the IDT major concentration.)
4. Approved transfer credit or post-master's courses may be accepted for not more than 12 semester hours.
5. Completion of the college residency requirements.

Additional information pertaining to the major and concentration areas may be secured from the Chair or Graduate Coordinator of the Department of Instruction and Curriculum Leadership.

# Instruction and Curriculum Leadership - Instruction and Curriculum, (EdD)

## EdD Degree Program

The primary purposes of the doctoral programs in the Department of Instruction and Curriculum Leadership are to prepare candidates for positions as teacher educators and researchers in colleges and universities; or, to produce experts in research and development who can lead initiatives to analyze, implement, and evaluate instructional materials and learning environments.

## Program Admission

Admission to the Graduate School and admission to a specific ICL graduate program are separate procedures. Applicants must submit the following admissions information:

- Application to the Graduate School that includes:
  1. Official Graduate Record Examination (GRE) score (verbal, quantitative, and writing)
  2. Official transcripts of undergraduate and graduate study
  3. Applicants who are not native speakers of English and are not graduates of The University of Memphis must supply a minimum score of 550 on the paper, a 210 on the computer-based, or 79 on the internet based Test of English as a Foreign Language (TOEFL).
- Application to the program in the Department of Instruction and Curriculum Leadership (departmental applications can be obtained via the ICL web site ([http://www.memphis.edu/icl/docs/edd\\_application\\_pc.docx](http://www.memphis.edu/icl/docs/edd_application_pc.docx)) that includes:
  1. Two letters of recommendation from people familiar with the applicant's academic background and aptitude for graduate work, specifying in detail the applicant's capabilities for doctoral study and for future performance and scholarship. At least one letter from a college/university professor is preferred.
  2. A written statement of 500 to 1000 words (maximum) indicating the intended area of focus in the doctoral program and the applicant's present interests and career goals.
  3. Interviews with two faculty members (one from the student's area of interest) that must be completed prior to the College deadlines. The doctoral application file must be completed before an interview will be scheduled. Submit the Department of Instruction and Curriculum Leadership application to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave, Memphis, TN 38152).
- Each student's file will be evaluated prior to full admission to the Department of Instruction and Curriculum Leadership. Only those files that are completed by the admission deadline will be considered. All application information must be received by February 1 for summer semesters, April 1 for fall semesters, and October 1 for the spring semester with the exception of applications for the EdD in the Instructional Design and Technology (IDT) program area, which has a summer admission only with a February 15 deadline.
- The above criteria represent the minimum acceptable admission requirements. Depending on the applicant's educational background, the graduate committee may require additional coursework to prepare the student for doctoral studies.

## Program Requirements

1. A minimum total of 54 post-master's hours.

2. The major will consist of 42-45 hours, including the department core requirements: ICL 8200 - Prof Sem/Doctoral Stdnt, ICL 8005 - The Nature of Knowledge, 9-12 hours of dissertation credit (ICL 9000), and 3-6 hours of Research Residency Seminar (ICL 8995). A maximum of 15 hours for ICL 8995 and ICL 9000 will be credited toward the degree.
  - NOTE: Students must adhere to the Thesis/Dissertation Preparation Guide when writing their dissertation.
  - (This does not apply to IDT whose doctoral students are expected to follow the program of study for the IDT major concentration.)
  - (This does not apply to students in SPED with an emphasis in Applied Behavior Analysis whose doctoral students are expected to follow the program of study identified in collaboration with their advisor.)
3. The research requirement for ICL will consist of 9-12 hours which includes EDPR 8541, EDPR 8561, and 3 - 6 additional elective research hours in consultation with advisor. The elective research hours should consist of courses directed toward research and/or statistical techniques and procedures necessary for the discipline and the dissertation topic.
  - (This does not apply to IDT whose doctoral students are expected to follow the program of study for the IDT major concentration.)
4. Approved transfer credit or post-master's courses may be accepted for not more than 12 semester hours.
5. Completion of the college residency requirements.

Additional information pertaining to the major and concentration areas may be secured from the Chair or Graduate Coordinator of the Department of Instruction and Curriculum Leadership.

## **Instruction and Curriculum Leadership - Instructional Design and Technology, (EdD)**

### **EdD Degree Program**

The Doctor of Education Degree in Instruction and Curriculum Leadership with a concentration in Instructional Design and Technology provides the skillsets to transition learners into scholars and expert practitioners in the rapidly growing field of technology, cognitive and learning science, instructional design, and learning analytics. The program prepares individuals for careers in business, government, healthcare, higher education, PK-12 education, and non-profit settings. Eclectic in nature, the program welcomes students from varied majors and career paths, including (but not limited to) art, business, communication, computer science, education, English, graphic design, philosophy, psychology, social work, and sociology. The cohort-based program is 100% online, 60 semester hours, designed to be completed in three years, and created for working professionals. Admittance into the program occurs once a year, with a Summer start. The degree program offers two tracks:

- Design and Development for those interested in training that takes place in business, higher education, government, healthcare, and non-profit settings
- Educational Technology for those interested in PK-12 education

### **Program Admission**

Applicants must have:

1. A Master's Degree from an accredited college or university
2. A Graduate School application with the following materials:

1. Cover letter (500-1000 words) describing the applicant's rationale for pursuing the degree program, the applicant's research and career interests, and the names of faculty members the applicant would like to work with.
  2. Official transcripts from each college or university attended.
  3. Official Graduate Record Examination (GRE) scores (verbal, quantitative, and writing) taken within the last five years.
  4. Two professional letters of recommendation discussing the applicant's academic background and aptitude for graduate work, specifying in detail the applicant's capabilities for doctoral study, future performance, and scholarship. At least one letter from a college/university professor is preferred.
  5. Academic writing sample that adheres to current APA formatting
  6. Paid application fee
  7. Non-native speakers of English must supply results of the Test of English as a Foreign Language (TOEFL). A minimum score of 550 on the paper, 210 on the computer-based, or 79 on the Internet-based exam is needed.
3. An interview with IDT faculty members. This interview will only be scheduled if the Graduate School application is complete.

Applicant files will be evaluated prior to full admission to the Department of Instruction and Curriculum Leadership. All application information must be received by February 15.

The above criteria represent the minimum acceptable admission requirements. Depending on the applicant's educational background, the graduate committee may require additional coursework to prepare the applicant for doctoral studies.

## Program Requirements

A minimum total of 60 post-masters, doctoral level credit hours must be completed—inclusive of coursework, a comprehensive examination, and a dissertation in practice. The cohort-based program is designed for students to complete all requirements in three years.

**Cohort and Continuous Enrollment Policy.** A doctoral student is accepted into a cohort, is expected to maintain continuous enrollment in the Summer, Fall, and Spring of each year, and is expected to complete courses in the order outlined and at the time indicated on their degree program course rotation. Most courses are only offered once a year. Failure to adhere to the cohort's course rotation may result in a one-year program delay and/or the need to reapply and receive program readmittance.

A doctoral student must take six hours of dissertation (9000 level course). The student must maintain continuous enrollment (Fall, Spring, and Summer) in a three-credit hour dissertation course until the dissertation is completed, unless a leave of absence for extenuating circumstances is permitted by IDT doctoral coordinator and doctoral advisor .

**Program Grade Policy.** A doctoral student in the IDT concentration must maintain a minimum GPA of 3.0 ("B"). Grades of "C+," "C," "C-," "D," "F," or "U" will not apply toward the degree but will be computed in the GPA. No more than 9 hours of "B" or "B-" will be applied towards meeting degree requirements.

Grades earned at another university will not be computed in the cumulative GPA.

The overall GPA required for graduation, computed on all graduate level courses completed (whether or not they are listed on the candidacy form), must also be a minimum of 3.0.

**Course Repetition Policy.** A doctoral student in the IDT concentration may repeat a course to earn a higher grade only if the earned grade was a "U" or a "B" (3.0) or lower. No course may be repeated more than once to improve the grade. Only the grade earned in the second attempt will be included in the computation of the cumulative grade point average. A maximum of two courses may be repeated during the student's doctoral career to improve a grade.

**Course Transfer Policy.** Course credit from another institution does not transfer automatically towards the doctoral degree. Doctoral course credit completed at another institution may be accepted, with the following provisions, (a) doctoral advisor approval, (b) comparable course content and objective to a degree required course, (c) course completion date is no more than 3



years from the degree start date, (e) a grade of a B+ or higher was earned in the course. No research or analysis course will be considered for transfer. Only 12 credit hours may be transferred toward the completion of the degree.

**Termination Policy.** A doctoral student may be terminated from the program after (a) earning two course grade of a "C+" or below (e.g., "C," "C-," "D," "F," "U," or "I") in any degree related course, (b) having a GPA below 3.0 ("B") for two consecutive semesters, (c) plagiarizing on any assignment or professional work, or (d) receiving a dispositions warning for a second time. Moreover, the comprehensive exam, proposal defense, or final dissertation defense may only be attempted twice each. Failure to successfully pass a second attempt of the comprehensive exam, proposal defense, or dissertation defense will result in dismissal from the program. A student taking more than 3 years to complete the program may be required to submit a plan for degree completion to the doctoral advisor and doctoral program coordinator. Failure to adhere to the plan may also result in program dismissal.

Procedures for termination as directed by the graduate school will be followed.

#### **Additional Information**

The program website, <https://www.memphis.edu/idt/>, provides additional information regarding course descriptions, schedules, policies, and so forth.

## **Instruction and Curriculum Leadership - Literacy Education, (EdD)**

### **EdD Degree Program**

The primary purposes of the doctoral programs in the Department of Instruction and Curriculum Leadership are to prepare candidates for positions as teacher educators and researchers in colleges and universities; or, to produce experts in research and development who can lead initiatives to analyze, implement, and evaluate instructional materials and learning environments.

### **Program Admission**

Admission to the Graduate School and admission to a specific ICL graduate program are separate procedures. Applicants must submit the following admissions information:

- Application to the Graduate School that includes:
  1. Official Graduate Record Examination (GRE) score (verbal, quantitative, and writing)
  2. Official transcripts of undergraduate and graduate study
  3. Applicants who are not native speakers of English and are not graduates of The University of Memphis must supply a minimum score of 550 on the paper, a 210 on the computer-based, or 79 on the internet based Test of English as a Foreign Language (TOEFL).
- Application to the program in the Department of Instruction and Curriculum Leadership (departmental applications can be obtained via the ICL web site ([http://www.memphis.edu/icl/docs/edd\\_application\\_pc.docx](http://www.memphis.edu/icl/docs/edd_application_pc.docx)) that includes:
  1. Two letters of recommendation from people familiar with the applicant's academic background and aptitude for graduate work, specifying in detail the applicant's capabilities for doctoral study and for future performance and scholarship. At least one letter from a college/university professor is preferred.
  2. A written statement of 500 to 1000 words (maximum) indicating the intended area of focus in the doctoral program and the applicant's present interests and career goals.
  3. Interviews with two faculty members (one from the student's area of interest) that must be completed prior to the College deadlines. The doctoral application file must be completed before an interview will be scheduled.

Submit the Department of Instruction and Curriculum Leadership application to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave, Memphis, TN 38152).

- Each student's file will be evaluated prior to full admission to the Department of Instruction and Curriculum Leadership. Only those files that are completed by the admission deadline will be considered. All application information must be received by February 1 for summer semesters, April 1 for fall semesters, and October 1 for the spring semester with the exception of applications for the EdD in the Instructional Design and Technology (IDT) program area, which has a summer admission only with a February 15 deadline.
- The above criteria represent the minimum acceptable admission requirements. Depending on the applicant's educational background, the graduate committee may require additional coursework to prepare the student for doctoral studies.

## Program Requirements

1. A minimum total of 54 post-master's hours.
2. The major will consist of 42-45 hours, including the department core requirements: ICL 8200 - Prof Sem/Doctoral Stdnt, ICL 8005 - The Nature of Knowledge, 9-12 hours of dissertation credit (ICL 9000), and 3-6 hours of Research Residency Seminar (ICL 8995). A maximum of 15 hours for ICL 8995 and ICL 9000 will be credited toward the degree.
  - NOTE: Students must adhere to the Thesis/Dissertation Preparation Guide when writing their dissertation.
  - (This does not apply to IDT whose doctoral students are expected to follow the program of study for the IDT major concentration.)
  - (This does not apply to students in SPED with an emphasis in Applied Behavior Analysis whose doctoral students are expected to follow the program of study identified in collaboration with their advisor.)
3. The research requirement for ICL will consist of 9-12 hours which includes EDPR 8541, EDPR 8561, and 3 - 6 additional elective research hours in consultation with advisor. The elective research hours should consist of courses directed toward research and/or statistical techniques and procedures necessary for the discipline and the dissertation topic.
  - (This does not apply to IDT whose doctoral students are expected to follow the program of study for the IDT major concentration.)
4. Approved transfer credit or post-master's courses may be accepted for not more than 12 semester hours.
5. Completion of the college residency requirements.

Additional information pertaining to the major and concentration areas may be secured from the Chair or Graduate Coordinator of the Department of Instruction and Curriculum Leadership.

## Instruction and Curriculum Leadership - Special Education, (EdD)

### EdD Degree Program

The primary purposes of the doctoral programs in the Department of Instruction and Curriculum Leadership are to prepare candidates for positions as teacher educators and researchers in colleges and universities; or, to produce experts in research and development who can lead initiatives to analyze, implement, and evaluate instructional materials and learning environments.

## Program Admission

Admission to the Graduate School and admission to a specific ICL graduate program are separate procedures. Applicants must submit the following admissions information:

- Application to the Graduate School that includes:
  1. Official Graduate Record Examination (GRE) score (verbal, quantitative, and writing)
  2. Official transcripts of undergraduate and graduate study
  3. Applicants who are not native speakers of English and are not graduates of The University of Memphis must supply a minimum score of 550 on the paper, a 210 on the computer-based, or 79 on the internet based Test of English as a Foreign Language (TOEFL).
- Application to the program in the Department of Instruction and Curriculum Leadership (departmental applications can be obtained via the ICL web site ([http://www.memphis.edu/icl/docs/edd\\_application\\_pc.docx](http://www.memphis.edu/icl/docs/edd_application_pc.docx)) that includes:
  1. Two letters of recommendation from people familiar with the applicant's academic background and aptitude for graduate work, specifying in detail the applicant's capabilities for doctoral study and for future performance and scholarship. At least one letter from a college/university professor is preferred.
  2. A written statement of 500 to 1000 words (maximum) indicating the intended area of focus in the doctoral program and the applicant's present interests and career goals.
  3. Interviews with two faculty members (one from the student's area of interest) that must be completed prior to the College deadlines. The doctoral application file must be completed before an interview will be scheduled. Submit the Department of Instruction and Curriculum Leadership application to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave, Memphis, TN 38152).
- Each student's file will be evaluated prior to full admission to the Department of Instruction and Curriculum Leadership. Only those files that are completed by the admission deadline will be considered. All application information must be received by February 1 for summer semesters, April 1 for fall semesters, and October 1 for the spring semester with the exception of applications for the EdD in the Instructional Design and Technology (IDT) program area, which has a summer admission only with a February 15 deadline.
- The above criteria represent the minimum acceptable admission requirements. Depending on the applicant's educational background, the graduate committee may require additional coursework to prepare the student for doctoral studies.

## Program Requirements

1. A minimum total of 54 post-master's hours.
2. The major will consist of 42-45 hours, including the department core requirements: ICL 8200 - Prof Sem/Doctoral Stdnt, ICL 8005 - The Nature of Knowledge, 9-12 hours of dissertation credit (ICL 9000), and 3-6 hours of Research Residency Seminar (ICL 8995). A maximum of 15 hours for ICL 8995 and ICL 9000 will be credited toward the degree.
  - NOTE: Students must adhere to the Thesis/Dissertation Preparation Guide when writing their dissertation.
  - (This does not apply to IDT whose doctoral students are expected to follow the program of study for the IDT major concentration.)
  - (This does not apply to students in SPED with an emphasis in Applied Behavior Analysis whose doctoral students are expected to follow the program of study identified in collaboration with their advisor.)

3. The research requirement for ICL will consist of 9-12 hours which includes EDPR 8541, EDPR 8561, and 3 - 6 additional elective research hours in consultation with advisor. The elective research hours should consist of courses directed toward research and/or statistical techniques and procedures necessary for the discipline and the dissertation topic.
  - (This does not apply to IDT whose doctoral students are expected to follow the program of study for the IDT major concentration.)
4. Approved transfer credit or post-master's courses may be accepted for not more than 12 semester hours.
5. Completion of the college residency requirements.

Additional information pertaining to the major and concentration areas may be secured from the Chair or Graduate Coordinator of the Department of Instruction and Curriculum Leadership.

## **Instruction and Curriculum Leadership- Social Studies Education Concentration (EdD)**

The purpose of the Instruction, Curriculum, and Leadership (ICL) Doctor of Education degree with a Social Studies concentration is to provide practical knowledge, training, and experience to individuals interested in exploring, researching, and implementing social studies content pedagogy in the K-12 environments.

### **EdD Degree Program**

The primary purposes of the doctoral programs in the Department of Instruction and Curriculum Leadership are to prepare candidates for positions as teacher educators and researchers in colleges and universities; or, to produce experts in research and development who can lead initiatives to analyze, implement, and evaluate instructional materials and learning environments.

### **Program Admission**

Admission to the Graduate School and admission to a specific ICL graduate program are separate procedures. Applicants must submit the following admissions information:

- Application to the Graduate School that includes:
  1. Official Graduate Record Examination (GRE) score (verbal, quantitative, and writing)
  2. Official transcripts of undergraduate and graduate study
  3. Applicants who are not native speakers of English and are not graduates of The University of Memphis must supply a minimum score of 550 on the paper, a 210 on the computer-based, or 79 on the internet based Test of English as a Foreign Language (TOEFL).
- Application to the program in the Department of Instruction and Curriculum Leadership (departmental applications can be obtained via the ICL web site ([http://www.memphis.edu/icl/docs/edd\\_application\\_pc.docx](http://www.memphis.edu/icl/docs/edd_application_pc.docx)) that includes:
  1. Two letters of recommendation from people familiar with the applicant's academic background and aptitude for graduate work, specifying in detail the applicant's capabilities for doctoral study and for future performance and scholarship. At least one letter from a college/university professor is preferred.
  2. A written statement of 500 to 1000 words (maximum) indicating the intended area of focus in the doctoral program and the applicant's present interests and career goals.

3. Interviews with two faculty members (one from the student's area of interest) that must be completed prior to the College deadlines. The doctoral application file must be completed before an interview will be scheduled. Submit the Department of Instruction and Curriculum Leadership application to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave, Memphis, TN 38152).
- Each student's file will be evaluated prior to full admission to the Department of Instruction and Curriculum Leadership. Only those files that are completed by the admission deadline will be considered. All application information must be received by February 1 for summer semesters, April 1 for fall semesters, and October 1 for the spring semester with the exception of applications for the EdD in the Instructional Design and Technology (IDT) program area, which has a summer admission only with a February 15 deadline.
  - The above criteria represent the minimum acceptable admission requirements. Depending on the applicant's educational background, the graduate committee may require additional coursework to prepare the student for doctoral studies.

## Program Requirements

1. A minimum total of 54 post-master's hours.
2. The major will consist of 42-45 hours, including the department core requirements: ICL 8200 - Prof Sem/Doctoral Stdnt, ICL 8005 - The Nature of Knowledge, 9-12 hours of dissertation credit (ICL 9000), and 3-6 hours of Research Residency Seminar (ICL 8995). A maximum of 15 hours for ICL 8995 and ICL 9000 will be credited toward the degree.
  - NOTE: Students must adhere to the Thesis/Dissertation Preparation Guide when writing their dissertation.
  - (This does not apply to IDT whose doctoral students are expected to follow the program of study for the IDT major concentration.)
  - (This does not apply to students in SPED with an emphasis in Applied Behavior Analysis whose doctoral students are expected to follow the program of study identified in collaboration with their advisor.)
3. The research requirement for ICL will consist of 9-12 hours which includes EDPR 8541, EDPR 8561, and 3 - 6 additional elective research hours in consultation with advisor. The elective research hours should consist of courses directed toward research and/or statistical techniques and procedures necessary for the discipline and the dissertation topic.
  - (This does not apply to IDT whose doctoral students are expected to follow the program of study for the IDT major concentration.)
4. Approved transfer credit or post-master's courses may be accepted for not more than 12 semester hours.
5. Completion of the college residency requirements.

Additional information pertaining to the major and concentration areas may be secured from the Chair or Graduate Coordinator of the Department of Instruction and Curriculum Leadership.

## Social Studies Concentration Requirements

- ICL 8172 - Spec Mthds Soc Stu Edu **Credit Hours: (3)**
- ICL 8653 - Mid/Sec Soc Std Curric **Credit Hours: (3)**
- ICL 8655 - Constructivism & the New Social Studies **\*\* Credit Hours: 3**
- ICL 8657 - Hist of Soc Studies Educatn **\*\* Credit Hours: (3)**
- ICL 8658 - Seminar Soc Stu Education **Credit Hours: (3)**

- ICL 8659 - Cold War Education \*\* Credit Hours: (3)

## **Leadership and Policy Studies - Educational Leadership Concentration, (EdD)**

Program objectives of the EdD in Leadership and Policy Studies (LDPS) Educational Leadership Concentration include the (1) development of skills in K-12 school leadership; (2) development of research skills relevant to data analysis (qualitative and quantitative) and the relationship of data to organizational effectiveness; and (3) garner knowledge and understanding within a concentration area (leadership).

### **Doctor of Education (EdD)**

#### **Program Admission**

Each applicant must submit a completed application to the University Graduate School that includes:

1. Official transcripts for all prior undergraduate and graduate courses.
2. Letter of application inclusive of a brief statement of professional goals
3. Professional resume
4. Three letters of professional recommendation on letterhead
5. A personal interview will be scheduled with each applicant. An admission decision will be made following the personal interview. The decision will be based on a holistic profile that includes information contained in the completed application packet described above and obtained during the personal interview. Interested applicants are encouraged contact the departmental office to obtain more information about the LDPS program
6. Deadline for submission of all application material is April 1 for the fall semester, and November 1 for the spring semester.

#### **Program Requirements**

##### **A minimum of 54 semester hours**

beyond the master's degree, including the core requirements (30 hours) of LEAD 8001, LEAD 8002, LEAD 8003, LEAD 8070, LDPS 8155 LDPS 8320 LDPS 8330, EDPR 8541, EDPR 8561, EDPR 8542 or EDPR 8565; 9 hours of dissertation (LEAD 9000); 12 hours approved concentration, 3 hours elective

Fifteen hours must be taken in the departmental core:

- LEAD 8001 - Educ Ldrship In Orgntns \*\* Credit Hours: (3)
- LEAD 8002 - Am Society & Ed Policy \*\* Credit Hours: (3)
- LEAD 8003 - Policy-Oriented Rsrch \*\* Credit Hours: (3)
- LEAD 8070 - Culminating Experience Credit Hours: (1-6)
- LDPS 8155 - Seminar in Ed Law \*\* Credit Hours: (3)
- LDPS 8320 - Urb Ed: Hst Cntmp Persp \*\* Credit Hours: (3)
- LDPS 8330 - Race/Ethn/Gndr/Amer Ed \*\* Credit Hours: (3)
- EDPR 8541 - Stat Meth App Ed I \*\* Credit Hours: (3)
- EDPR 8561 - Qualitative Mthds Educ \*\* Credit Hours: (3)
- EDPR 8542 - Statistical Methods Applied to Education II Credit Hours: (3)

or

- EDPR 8565 - Qual Methods and Analysis \*\* Credit Hours: (3)

## Educational Leadership Concentration Requirements:

- LEAD 8140 - Planning Ed Change Credit Hours: (3)
- LDPS 8115 - Educ Ldrshp Sem Credit Hours: (3)
- LDPS 8121 - Personnel Admin Credit Hours: (3)
- LDPS 8132 - School Finance Credit Hours: (3)  
3 hour elective course

## Dissertation (9 hours)

- LEAD 9000 - Dissertation \*\* Credit Hours: (1-9)

## NOTE:

Doctoral programs are not intended for basic school administrative certification. Students wishing certification through this program must complete additional course work detailed in the K-12 Educational Leadership Certificate.

## Leadership and Policy Studies - Policy Studies Concentration, (EdD)

Program objectives of the EdD in Leadership and Policy Studies (LDPS) include the (1) development of skills in K-12 policy research and implementation; (2) development of research skills relevant to data analysis (qualitative and quantitative) and the relationship of data to organizational effectiveness; and (3) garner knowledge and understanding within a concentration area (policy studies).

## Doctor of Education (EdD)

### Program Admission

Each applicant must submit a completed application to the University Graduate School that includes:

1. Official transcripts for all prior undergraduate and graduate courses.
2. Letter of application inclusive of a brief statement of professional goals
3. Professional resume
4. Three letters of professional recommendation on letterhead
5. A personal interview will be scheduled with each applicant. An admission decision will be made following the personal interview. The decision will be based on a holistic profile that includes information contained in the completed application packet described above and obtained during the personal interview. Interested applicants are encouraged contact the departmental office to obtain more information about the LDPS program
6. Deadline for submission of all application material is April 1 for the fall semester, and November 1 for the spring semester.

### Program Requirements

A minimum of 54 semester hours

beyond the master's degree, including the core requirements (30 hours) of LEAD 8001, LEAD 8002, LEAD 8003, LEAD 8070, LDPS 8155 LDPS 8320 LDPS 8330, EDPR 8541, EDPR 8561, EDPR 8542 or EDPR 8565; 9 hours of dissertation (LEAD 9000); 12 hours approved concentration, 3 hours elective

Fifteen hours must be taken in the departmental core:

- LEAD 8001 - Educ Ldrshp In Orgntns \*\* Credit Hours: (3)
- LEAD 8002 - Am Society & Ed Policy \*\* Credit Hours: (3)
- LEAD 8003 - Policy-Oriented Rsrch \*\* Credit Hours: (3)
- LEAD 8070 - Culminating Experience Credit Hours: (1-6)
- LDPS 8155 - Seminar in Ed Law \*\* Credit Hours: (3)
- LDPS 8320 - Urb Ed: Hst Cntmp Persp \*\* Credit Hours: (3)
- LDPS 8330 - Race/Ethn/Gndr/Amer Ed \*\* Credit Hours: (3)
- EDPR 8541 - Stat Meth App Ed I \*\* Credit Hours: (3)
- EDPR 8561 - Qualitative Mthds Educ \*\* Credit Hours: (3)
- EDPR 8542 - Statistical Methods Applied to Education II Credit Hours: (3)
- or
- EDPR 8565 - Qual Methods and Analysis \*\* Credit Hours: (3)

Policy Studies Concentration Requirements:

- LDPS 8133 - Econ of Education Credit Hours: (3)
  - LDPS 8180 - Pltcs & Pwr Ed Ldrshp Credit Hours: (3)
  - LDPS 8181 - Plcy Implmntn Ed Ldrshp Credit Hours: (3)
  - LDPS 8310 - Phil Anly & Educ Plcy Credit Hours: (3)
- 3 hour elective

Dissertation (9 hours)

- LEAD 9000 - Dissertation \*\* Credit Hours: (1-9)

NOTE:

Doctoral programs are not intended for basic school administrative certification. Students wishing certification through this program must complete additional course work detailed in the K-12 Educational Leadership Certificate.

## Leadership and Policy Studies, (EdD)

Doctor of Education (EdD)

Program Admission

Each applicant must submit a completed application to the University Graduate School that includes:

1. Official transcripts for all prior undergraduate and graduate courses.



2. Letter of application inclusive of a brief statement of professional goals
3. Professional resume
4. Three letters of professional recommendation on letterhead
5. A personal interview will be scheduled with each applicant. An admission decision will be made following the personal interview. The decision will be based on a holistic profile that includes information contained in the completed application packet described above and obtained during the personal interview. Interested applicants are encouraged contact the departmental office to obtain more information about the LDPS program
6. Deadline for submission of all application material is April 1 for the fall semester, and November 1 for the spring semester.

## Program Requirements

### A minimum of 54 semester hours

beyond the master's degree, including the core requirements (30 hours) of LEAD 8001, LEAD 8002, LEAD 8003, LEAD 8070, LDPS 8155 LDPS 8320 LDPS 8330, EDPR 8541, EDPR 8561, EDPR 8542 or EDPR 8565; 9 hours of dissertation (LEAD 9000); 12 hours approved concentration, 3 hours elective

Fifteen hours must be taken in the departmental core:

- LEAD 8001 - Educ Ldrship In Orgntns \*\* Credit Hours: (3)
- LEAD 8002 - Am Society & Ed Policy \*\* Credit Hours: (3)
- LEAD 8003 - Policy-Oriented Rsrch \*\* Credit Hours: (3)
- LEAD 8070 - Culminating Experience Credit Hours: (1-6)
- LDPS 8155 - Seminar in Ed Law \*\* Credit Hours: (3)
- LDPS 8320 - Urb Ed: Hst Cntmp Persp \*\* Credit Hours: (3)
- LDPS 8330 - Race/Ethn/Gndr/Amer Ed \*\* Credit Hours: (3)
- EDPR 8541 - Stat Meth App Ed I \*\* Credit Hours: (3)
- EDPR 8561 - Qualitative Mthds Educ \*\* Credit Hours: (3)
- EDPR 8542 - Statistical Methods Applied to Education II Credit Hours: (3)
- or
- EDPR 8565 - Qual Methods and Analysis \*\* Credit Hours: (3)

## Liberal Studies, (DLS)

### Doctor of Liberal Studies Degree Program

#### Admission Standards

- Hold an earned Master's degree from a regionally accredited U.S. college or university. International Master's degrees will be evaluated on an individual basis.
- Have a cumulative Grade Point Average (GPA) of 3.25 on a 4.0 scale in all earned graduate coursework.
- Acceptance to the University of Memphis Graduate School.
- Submit a portfolio of professional work experience along with a detailed statement of educational and professional goals, along with three letters of recommendation.
- Submit an original, research-based writing sample of 20-30 pages.

- Submit a proposed Course of Study identifying specific courses (with substitutes) to be completed outside of the College of Professional and Liberal Studies DLS Core.
- Potential Interview with the Graduate Admissions Committee in the College of Professional and Liberal Studies.
- GRE is not required.

## Program Requirements

- Earn 54 hours of post-master's coursework at the 7000 and/or 8000 course level.
- Complete the 21 hours of College of Professional and Liberal Studies core requirements (including the 6-hour Dissertation/Capstone Project)
  - Foundations in Liberal Studies (3)
  - Research in Interdisciplinary Studies (3)
  - Data-Based Decision Making (3)
  - Liberal Studies Seminar (3)
  - Prospectus Design (3)
  - Dissertation/Capstone Project (6)
  - Students who have previously completed UNIV 7000, UNIV 7100, or a quantitative research methods course may petition the Graduate Coordinator to apply these courses for the degree, though total credits required will not be reduced.
  - Students who have previously completed UNIV 7200 will need to complete UNIV 8200 with a separate topic than UNIV 7200.
- Complete 33 hours in two or more disciplines with no more than 18 hours in any one discipline.
- Successfully complete comprehensive exams and defend the Dissertation/Capstone Project.
- No more than two courses with a grade below B- may be counted towards the degree.
- Students whose GPA remains below 3.0 for more than 2 consecutive semesters may be dropped from the program.

## Comprehensive Exams

- **Comprehensive Exam committee**
  - Each student's committee members must include at least one member from each concentration and at least one member from the College of Professional and Liberal Studies. Students, in conjunction with their advisor, will identify a Chair for their Oral Exams. This individual could also chair their Dissertation/Capstone Project.
- **Comprehensive Exam Questions**
  - Questions will be determined by the faculty of the student's program and based on the topics of the concentrations they have pursued. Comprehensive exams will include both written responses to faculty questions and an oral defense of those answers. Students will be required to answer written questions from each committee member, with up to two hours to answer questions posed by each committee member.
  - Oral exams will normally be held no sooner than two weeks after the written exams have been completed and no later than a month after written exams have been completed. Oral exams will include all members of the exam committee. Each committee member may question the student for up to 30 minutes.

## For Students Completing a Dissertation

- **Dissertation Committee**
  - The dissertation committee will normally consist of the student's Comprehensive Exam committee, with, if needed, an appropriate qualitative or quantitative research specialist. At least one member from each of the student's concentrations and at least one member from the College of Professional and Liberal Studies is required. The Chair of the dissertation committee must have full graduate faculty status, and will receive a

monetary stipend to act as Chair for a student outside of their department. Typically, a committee will include four to five people. <sup>[1]</sup><sub>[SEP]</sub>

- **Dissertation Expectations**
  - The student's committee must approve each dissertation prospectus. During the prospectus course (UNIV 8990), the dissertation will be outlined and approved by the committee with the expectation of appropriate professionalism, as well as academic rigor. Students are required to get this approved prior to registering for any dissertation hours.
  - Students completing a dissertation will create a research-based, interdisciplinary, original contribution that reflects the student's ability to conduct independent research.

## For Students Completing a Capstone Project

- **Capstone Project Committee**
  - The Capstone Project Committee will normally consist of the student's Comprehensive Exam committee, with, if needed, an appropriate qualitative or quantitative research specialist. At least one member from each of the student's concentrations and at least one member from the College of Professional and Liberal Studies is required. The Chair of the Capstone Project Committee must have full graduate faculty status, and will receive a monetary stipend to act as Chair for a student outside of their department. Typically, a committee will include four to five people.
- **Capstone Project Expectations**
  - The student's committee must approve each capstone project. During the prospectus course (UNIV 8990), the project will be outlined and approved by the committee with the expectation of appropriate professionalism, as well as academic rigor. Students are required to get this approved prior to registering for any capstone project hours. <sup>[1]</sup><sub>[SEP]</sub>
  - Though each project will be individualized for each project focus, every project will be required to include the following components, but are not limited to these topics alone:
    - Needs Analysis
    - Inventory of other similar community-based resources <sup>[1]</sup><sub>[SEP]</sub>
    - Potential stakeholders <sup>[1]</sup><sub>[SEP]</sub>
    - Impact within the community (For example; cultural, environmental, <sup>[1]</sup><sub>[SEP]</sub>policy, or political impacts)
    - Literature review
      - Include case studies of similar projects should be identified
    - Methodology
    - Potential Budget, Financial Plan, and Sustainability
    - Results/Findings
      - If implementation is not planned during the duration of the capstone project, then a pilot must be implemented and results/findings discussed at the Defense.
    - Recommendations

## Dissertation/Capstone Project Defense

- Each student will provide either an electronic or hard copy of the written portion of her or his dissertation/capstone project to their committee members at least four <sup>[1]</sup><sub>[SEP]</sub>weeks prior to the scheduled defense date. <sup>[1]</sup><sub>[SEP]</sub>
- The defense of the student's dissertation/capstone project will normally be an oral defense. Students should be prepared to give a brief summary of their work to the committee before fielding questions. The defense of the dissertation/capstone project should not last more than two hours, after which the committee should inform the candidate of its decision. <sup>[1]</sup><sub>[SEP]</sub>
- As the University of Memphis offers dissertation and capstone hours on a Satisfactory/Unsatisfactory/In Progress basis, College of Professional and Liberal Studies will not assign final grades to a student's dissertation or capstone project. Nonetheless, each student should obtain a Defense Assessment Rubric from the Graduate Studies Coordinator and

provide a copy to each member of her/his committee along with one copy of the Graduate School's "Final Defense Results Form" to the committee chair. <sup>11/17</sup>SEP

## Mathematical Sciences - Applied Statistics Concentration, (PhD)

### PhD Degree Program

Program objectives are: (1) development of knowledge to appreciate, reconstruct and create mathematical reasoning; (2) development of skills leading to high quality research in mathematics; and (3) development of oral and written mathematical proficiency.

### Admission Requirements

1. GRE scores are required and are an important factor for admission.
2. Three letters of recommendation
3. TOEFL scores are required for students whose native language is not English.
4. An undergraduate degree in an appropriate discipline with a minimum GPA of 3.0 (on a 4.0 scale) or equivalent preparation

### Program Requirements

#### 72 Credit Hours of Graduate Credit

The doctoral degree program requires satisfactory completion of a minimum of 72 credit hours of graduate credit (a minimum of 36 hours for a student entering with an approved master's degree). The 72 hours:

1. may include a maximum of 12 hours of 6000 level coursework, but must include at least 18 hours of 8000 level course work;
2. must include between 9 and 15 hours of dissertation (MATH 9000);
3. cannot include the following courses courses: MATH 6050, MATH 6051, MATH 7281, MATH 7282, MATH 7383, MATH 7384, MATH 7385, MATH 7391, or MATH 7601; and
4. must include the satisfactory completion of the requirements for one of the concentrations: Applied Statistics or Mathematics.

#### Each student must:

1. obtain a passing grade on a qualifying examination;
2. obtain a passing grade on a comprehensive examination;
3. complete an acceptable dissertation (Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.); and
4. pass a final examination given by a committee composed of departmental and university representatives. Detailed information can be obtained by contacting the graduate coordinator of the department.

### Applied Statistics Concentration

Students must complete the following courses:

- MATH 7642-MATH 8642

- MATH 7651-MATH 8651
- MATH 7670-MATH 8670
- MATH 7692-MATH 8692
- MATH 7695-MATH 8695

## Two Courses From

- MATH 7759-MATH 8759
- MATH 7763-MATH 8763
- MATH 7764-MATH 8764
- MATH 7765-MATH 8765

## In Addition

In addition, students are required to give at least two formal presentations through taking

- MATH 7691-MATH 8691

## Dissertation

Presentation of an acceptable dissertation proposal within six months after passing the comprehensive examination. Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

# Mathematical Sciences - Mathematics Concentration, (PhD)

## PhD Degree Program

Program objectives are: (1) development of knowledge to appreciate, reconstruct and create mathematical reasoning; (2) development of skills leading to high quality research in mathematics; and (3) development of oral and written mathematical proficiency.

## Admission Requirements

1. GRE scores are required and are an important factor for admission.
2. Three letters of recommendation
3. TOEFL scores are required for students whose native language is not English.
4. An undergraduate degree in an appropriate discipline with a minimum GPA of 3.0 (on a 4.0 scale) or equivalent preparation

## Program Requirements

### 72 Credit Hours of Graduate Credit

The doctoral degree program requires satisfactory completion of a minimum of 72 credit hours of graduate credit (a minimum of 36 hours for a student entering with an approved master's degree). The 72 hours:

1. may include a maximum of 12 hours of 6000 level coursework, but must include at least 18 hours of 8000 level course work;
2. must include between 9 and 15 hours of dissertation (MATH 9000);
3. cannot include the following courses courses: MATH 6050, MATH 6051, MATH 7281, MATH 7282, MATH 7383, MATH 7384, MATH 7385, MATH 7391, or MATH 7601; and
4. must include the satisfactory completion of the requirements for one of the concentrations: Applied Statistics or Mathematics.

#### Each student must:

1. obtain a passing grade on a qualifying examination;
2. obtain a passing grade on a comprehensive examination;
3. complete an acceptable dissertation (Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.); and
4. pass a final examination given by a committee composed of departmental and university representatives. Detailed information can be obtained by contacting the graduate coordinator of the department.

## Mathematics Concentration

The PhD concentration in mathematics is designed so that students may pursue a degree based on independent research or may choose a more broadly based program aimed toward a college teaching career. Students may contact the department for more detailed information.

#### Students must complete the following courses:

- MATH 7261 - Algebraic Theory I **Credit Hours: (3)**
- MATH 7262 - Algebraic Theory II **Credit Hours: (3)**
- MATH 7350 - Real Variables I **Credit Hours: (3)**
- MATH 7351 - Real Variables II **Credit Hours: (3)**

Additional requirements can be found by visiting the following webpage: [www.memphis.edu/msci/grad/phdmath](http://www.memphis.edu/msci/grad/phdmath)

## Music - Composition Concentration, (DMA)

### DMA Degree Program

The DMA degree is structured to allow maximum flexibility in designing a program around each student's background and needs. Although the distribution of hours is firm, program requirements are to be regarded as general rather than fixed. The student's preparation, experience, and stated goals are carefully evaluated before an individually selected course of study is prescribed.

Program objectives are: (1) competency in music theory, music history, advanced research, and pedagogical for classroom or studio; (2) preparation for college or university teaching; (3) preparation for auditions at orchestra or performing ensemble.

### Program Admission

Admission requirements can be found on this catalog's page for the Rudi E. Scheidt School of Music. Additional information can be found in the School of Music Graduate Handbook.

## Composition

## Music History and Music Theory (9 hours)

Students must take 3 hours of music history, 3 hours of music theory, and can choose between history or theory for the remaining 3 hours. Any graduate music theory or history course may be used for this requirement with the exception of individual studies, pedagogy, or repertory courses. Students with a cognate area in music history or theory may substitute electives for those credits in the core requirements.

## Applied Lessons (15 hours)

Taken over five semesters.

- MUTC 8501 - Composition **Credit Hours:** (2-6)

## Cognate area in music (9 hours)

Requirements for cognates in the School of Music can be found in section 6.5 of the School of Music Graduate Handbook.

## Dissertation (9 hours)

The dissertation will consist of a work of significant scope.

- MUTC 9000 - Dissertation **Credit Hours:** (1-9)

## Music - Conducting Concentration, (DMA)

### DMA Degree Program

The DMA degree is structured to allow maximum flexibility in designing a program around each student's background and needs. Although the distribution of hours is firm, program requirements are to be regarded as general rather than fixed. The student's preparation, experience, and stated goals are carefully evaluated before an individually selected course of study is prescribed.

Program objectives are: (1) competency in music theory, music history, advanced research, and pedagogical for classroom or studio; (2) preparation for college or university teaching; (3) preparation for auditions at orchestra or performing ensemble.

### Program Admission

Admission requirements can be found on this catalog's page for the Rudi E. Scheidt School of Music. Additional information can be found in the School of Music Graduate Handbook.

## Conducting

### Music History and Music Theory (6 hours)

3 hours of music history and 3 hours of music theory. Any graduate music theory or history course may be used for this requirement with the exception of individual studies, pedagogy, or repertory courses. Students with a cognate area in music history or theory may substitute electives for those credits in the core requirements.

## Applied Lessons (15 hours)

Taken over 5 semesters

- MUAP 8701 - Conducting **Credit Hours: (2-6)**

## Cognate area in music (9 hours)

Requirements for cognates in the School of Music can be found in section 6.5 of the School of Music Graduate Handbook.

## Major Field Area (9 hours)

Area requirements for the major field can be found in section 6.5 of the School of Music Graduate Handbook.

## Dissertation Equivalent (6 hours)

Three public recitals of repertory approved by the doctoral committee are required. A formal research document on a topic approved by the committee will also be submitted to the Graduate School after the final defense; music covered by this document will also appear on one of the recitals. The 6 hours of dissertation equivalent must include at least 4 hours of MUAP 8999 and at least 1 hour of MUAP 9000.

## **Music - Music Education Concentration, (PhD)**

### PhD Degree Program

The PhD degree is structured to allow maximum flexibility in designing a program around each student's background and needs. Although the distribution of hours is firm, program requirements are to be regarded as general rather than fixed. The student's preparation, experience, and stated goals are carefully evaluated before an individually selected course of study is prescribed.

Program objectives are: (1) competency in selected area of concentration and related research areas; (2) development of teaching skills; and (3) ability to successfully publish research in a selected music discipline.

### Program Admission

Admission requirements can be found on this catalog's page for the Rudi E. Scheidt School of Music. Additional information can be found in the School of Music Graduate Handbook.

### Music Education

Admission to the PhD program in Music Education is highly competitive. Students must submit proof of employment in the field and proof of licensure/certification. In addition, a written philosophy of music education and an example of research in the field must be submitted to the Music Education Area.

## Major Field (15 hours)

- MUSE 8207 - Measure Music Behavior **Credit Hours: (3)**



- MUSE 8606 - Desc/Exp Research Music **Credit Hours: (3)**
- EDPR 8541 - Stat Meth App Ed I \*\* **Credit Hours: (3)**
- EDPR 8542 - Statistical Methods Applied to Education II **Credit Hours: (3)**
- EDPR 8561 - Qualitative Mthds Educ \*\* **Credit Hours: (3)**

Music and/or MUSE electives (18 hours)

Minor (18 hours)

Dissertation (9 hours)

- MUSE 9000 - Dissertation **Credit Hours: (1-9)**

**NOTE:**

Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write.

## **Music - Musicology Concentration, (PhD)**

**NOTE:** The Southern Regional Studies program is not accepting applications at this time.

### **PhD Degree Program**

The PhD degree is structured to allow maximum flexibility in designing a program around each student's background and needs. Although the distribution of hours is firm, program requirements are to be regarded as general rather than fixed. The student's preparation, experience, and stated goals are carefully evaluated before an individually selected course of study is prescribed.

Program objectives are: (1) competency in selected area of concentration and related research areas; (2) development of teaching skills; and (3) ability to successfully publish research in a selected music discipline.

### **Program Admission**

Admission requirements can be found on this catalog's page for the Rudi E. Scheidt School of Music. Additional information can be found in the School of Music Graduate Handbook.

**Students will follow either:**

#### **MUSICOLOGY**

A program providing a broad background in historical musicology culminating in a dissertation on a musicological topic agreed upon by the student and the doctoral committee.

#### **Musicology Major Field (27 hours)**

A minimum of 9 courses in the major area, including:

- MUHL 8531 - Early Musical Notation **Credit Hours: (3)**
- MUHL 8505 - Seminar Musicology **Credit Hours: (3)**

### Cognate Field (9 hours)

These 9 hours of graduate coursework must be in an approved humanistic discipline outside music.

### Dissertation (6 hours)

- MUHL 9000

Note: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write.

A reading knowledge of two foreign languages, ordinarily including German, must be demonstrated before graduation.

OR

### Southern Regional Studies

This program is not currently accepting applicants. A program providing a broad background in ethnomusicology with a focus on the music of the southern United States.

### Ethnomusicology Major Field (27 hours)

A minimum of nine courses in the major area (27 hours). Two of the remaining five courses in music shall have a major focus on Southern regional music.

- MUHL 7800 - Field Method in Ethnomusicology **Credit Hours: (3)**
- OR
- MUHL 8800 - Field Method in Ethnomusicology **Credit Hours: (3)**
- MUHL 8801 - Ethnomusicology **Credit Hours: (3)**
- MUHL 8805 - Transcription/Analysis in Ethnomusicology **Credit Hours: (3)**
- MUHL 8806 - Seminar Southern Regional Music **Credit Hours: (3)**

### Cognate Field (9 hours)

These 9 hours of graduate coursework must be in an approved humanistic discipline outside music.

### Dissertation (6 hours)

- MUHL 9000

Note: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write.

A reading knowledge of two foreign languages, ordinarily including German, must be demonstrated before graduation.

## **Music - Performance Concentration, (DMA)**

## DMA Degree Program

The DMA degree is structured to allow maximum flexibility in designing a program around each student's background and needs. Although the distribution of hours is firm, program requirements are to be regarded as general rather than fixed. The student's preparation, experience, and stated goals are carefully evaluated before an individually selected course of study is prescribed.

Program objectives are: (1) competency in music theory, music history, advanced research, and pedagogical for classroom or studio; (2) preparation for college or university teaching; (3) preparation for auditions at orchestra or performing ensemble.

## Program Admission

Admission requirements can be found on this catalog's page for the Rudi E. Scheidt School of Music. Additional information can be found in the School of Music Graduate Handbook.

## Core Requirements (6 hours)

1. Music History (3 hours)
2. Music Theory (3 hours)

Students with a cognate area in music history or theory may substitute electives for those credits in the core requirements.

## Performance Concentration Requirements

Performance (bass, bassoon, cello, clarinet, euphonium, flute, guitar, harpsichord, horn, multiple woodwind instruments, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice) (45 hours)

## Applied Lessons (15 hours)

Taken over five semesters

## Cognate area in music (9 hours)

Requirements for cognates in the School of Music can be found in section 6.5 of the School of Music Graduate Handbook.

## Major Field area (9 hours)

Area requirements for the major field can be found in section 6.5 of the School of Music Graduate Handbook.

## Dissertation Equivalent (6 hours)

Three public recitals, of repertory approved by the doctoral committee, are required. A formal research document on a topic approved by the committee will also be submitted to the Graduate School after the final defense; music covered by this document will also appear on one of the recitals. (These requirements are part of the applied music hours. Voice majors may submit a proposal requesting substitution of a major operatic role for one recital. Further details are contained in the "Voice Area Policies and Procedures" document, available from the area coordinator. The 6 hours of dissertation equivalent must include at least 4 hours of MUAP 8999 and at least 1 hour of MUAP 9000.)

## Nursing, (PhD)

## Doctor of Philosophy (PhD) Program

Dr. Leanne L. Lefler

Associate Dean for Research & William A. & Ruth F. Loewenberg Endowed Chair of Excellence |&nbsp;Professor  
Culture of Health Nurse Leader, Robert W. Johnson Foundation  
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Dr. Genae Strong

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The Loewenberg College of Nursing at The University of Memphis offers a PhD degree in Nursing, the highest academic degree for individuals planning to pursue scholarly careers in the nursing discipline. This PhD Program is designed for those who plan to assume a role as nurse researcher/scholar/educator in academic nursing as well as healthcare settings through research experimentation and theory application to generate new knowledge. The program will emphasize health equity in practice, education, and policy locally to globally.

Graduates of the PhD program will be prepared to:

1. conduct rigorous nursing and interdisciplinary research,
2. generate new knowledge that guides nursing practice, and
3. lead educational research in program and course design, clinical education, and the evaluation of learning that prepares nurses of the future.

## Program Admission

The applicant must meet all criteria for admission to the graduate school. A master's degree is required for admission and international applicants will be expected to submit a minimum score of 550 on the paper, a 210 on the computer-based, or 79 on the internet based Test of English as a Foreign Language (TOEFL).

Additionally, applicants will:

1. possess an unencumbered RN license or equivalent in the student's state/nation of residence.
2. earned Master's Degree with minimum GPA of 3.0. If a GPA is not available, the Graduate Record Examination (GRE) is required with scores from the last five years with a minimum of verbal and quantitative score of 140 and analytical writing score of at least 3.0.
3. provide three letters of reference from individuals familiar with the applicant's capabilities for doctoral study and for future performance as a nurse scholar and researcher. Generally, two letters from former professors will be expected.
4. submit a personal statement of approximately 750-1000 words indicating his/her present interests and career goals, including how the PhD in Nursing will prepare the student to achieve those goals.
5. provide a writing sample (e.g., published paper, or coursework from previous degree program is acceptable).
6. provide a copy of the applicant's curriculum vitae (CV) or resume.
7. interview via phone, face-to-face, or Skype will be required.

The PhD Program Committee will review all submitted materials. Admissions decisions are made on the overall quality of the applicant's professional background in nursing, scholarship, academic ability, as well as the applicant's "fit" for the program in terms of academic background, research interests, and career goals.

## Program Requirements

## Credit Hours:

To qualify for graduation, students must meet all U of M Graduate School requirements. Additionally, students must complete a minimum of 60 semester hours of graduate course work beyond the master's degree and 54 semester hours beyond the Doctorate of Nursing Practice (DNP) degree.

## Transfer Credit:

Previously earned doctoral credits may be considered for transfer by the student's advisory committee in accordance with the Graduate School policy; however, residency requirements stipulate that the last thirty semester hours of credit for the doctoral degree (including 9 dissertation hours) must be earned at the U of M. Credit towards a graduate degree does not transfer automatically. However, graduate work completed at another institution in a program accredited at the graduate level may be accepted in a graduate degree program at the University, with the following provisions. (1) They relate to the content of the graduate program and/or are comparable to those offered at the University. (2) They do not exceed time limitations set for doctoral programs.

Credit previously earned at another institution must be presented for evaluation no later than the end of the student's second semester of enrollment. Forms are available on-line or from the Graduate School Graduation Analyst. Only transcripts received directly from an issuing institution are considered official. Approved transfer credit may be accepted for one-half the number of semester hours of course credit toward a doctoral degree. Credit will be transferred to apply toward a doctoral program upon approval of the student's advisory committee.

Courses proposed for transfer credit must meet the following two requirements. (1) a minimum of 750 contact minutes for each semester credit (2250 for a 3-hour course). (2) a minimum of 3 hours of class work per week for 3 hours of credit. Grades earned at another institution will not be computed in the University cumulative grade point average, nor will they be accepted for transfer, unless they are "B" (3.0) or better. No credit will be transferred unless it meets with the approval of the major advisor or program graduate coordinator.

## Enrollment:

Full-time students are expected to carry a minimum of 9 credits per semester, and to devote full time during their enrollment to the pursuit of degree-related activities. Full-time students with graduate assistantships are required to enroll for 9 credits each semester. Part-time students are expected to carry a minimum of 6 credits per semester, unless permission is granted from the advisor for a reduced course load.

## Research:

All doctoral students are expected to be active in research collaboratively with members of the faculty each semester they are enrolled.

## Retention Requirements:

Students must earn a grade of B (3.0) or higher in all required courses. The PhD program will adhere to Graduate School policy regarding course grades and repetition of courses. All courses applied toward PhD degree program requirements must have the advisor's written approval.

Retention requirements are per policies stipulated by the U of M Graduate School. In terms of course performance, no more than seven (7) credit hours in which a grade of C or below was earned will be counted toward degree requirements.

In order to remain eligible for departmental funding, you must maintain an overall grade point average (GPA) of 3.0 on a 4-point scale. A minimum of 3.0 is also required for graduation. According to the U of M Graduate School, grades of "D" and "F" will

not apply toward any graduate degree, but will be calculated in the GPA. Please note that grades from other institutions are not computed in calculating the GPA.

## Residency Requirements:

The last 30 credit hours must be earned at The University of Memphis. Credit will be transferred to apply toward a doctoral program upon approval of the student's advisory committee in accordance with Graduate School policy.

## Comprehensive Examination:

Prior to enrolling for dissertation hours (NURS 9000), a student must successfully complete both a written and oral comprehensive examination. The examination will assess mastery of areas covered in the doctoral program. The content of the examination will consist of theory and methodology, and nursing issues central to the student's main research area. Since the examination is designed to test each student's knowledge of the field, it is not confined to material covered in classes.

Prior to initiating the examination process, a student must have completed at least 30 credit hours of coursework in the program. Additionally, he/she is required to be enrolled during the semester he/she proposes to take the comprehensive exam.

- The student's comprehensive examination will be reviewed by the committee in relation to:
- Quality of written and oral examination
- Ability to conceptualize and analyze the topic in depth
- Capacity for original thought and substantive knowledge in the focused area
- Integration of state of the art knowledge

University policy does not consider comprehensive examinations to be a course; therefore, the results of the examination are not appealable. University policy allows you to take the comprehensive examination twice; failure to pass on the second attempt results in dismissal from the university. The dismissal may be appealed (see Retention Appeals in the Graduate Catalog).

## Dissertation:

To fulfill the requirements for the PhD in Nursing, the student must write and defend a dissertation. The dissertation must adhere to the format outlined by the Graduate School. The dissertation topic will be determined by the student in consultation with the advisor and input from the advisory committee.

## Program Curriculum:

The Nursing PhD Program is a 60-semester hour degree program beyond the master's degree and 54-semester credit hours beyond the Doctor of Nursing Practice (DNP) degree.

### Nursing Science Core: 6 credit hours

- NURS 8111 - Philosophy of Science \*\* Credit Hours: (3)
- NURS 8112 - Middle-Range Theories in Nsg \*\* Credit Hours: (3)

### Research Core: 18 credit hours

- NURS 8311 - Doctoral Research Seminar II \*\* Credit Hours: (3)
- NURS 8312 - Doctoral Research Seminar II \*\* Credit Hours: (3)
- NURS 8313 - Resp. Conduct of Research \*\* Credit Hours: (1)

- NURS 8314 - Doctoral Research Practicum \*\* Credit Hours: (2-3)
- NURS 8211 - Qualitative Methods \*\* Credit Hours: (3)
- NURS 8213 - Quantitative Methods \*\* Credit Hours: (3)
- PUBH 7150 - Biostatistical Methods I \*\* Credit Hours: (3)

#### Education Core: 6 credit hours

- EDPR 8541 - Stat Meth App Ed I \*\* Credit Hours: (3)
- ICL 8003 - Curric Design/Evalatn Credit Hours: (3)

#### Health Equity Core: 6 credit hours

- NURS 8113 - Health Equity Research \*\* Credit Hours: (3)
- PUBH 7160 - Soc/Behav Science Principles \*\* Credit Hours: (3)

#### Electives: 6-12 credit hours

A total of six (6) credit hours are required post DNP and twelve (12) credit hours are required post MSN, example courses are:

#### Education Focus Electives:

- HIAD 8541 - Issues/Trends Tchg Adults \*\* Credit Hours: (3)
- ICL 7030 - Assessment & Evaluation \*\* Credit Hours: (3)
- EDPR 7561 - Qualitative Mthds Educ \*\* Credit Hours: (3)
- EDPR 7521 - Introduction to Research Design and Methodology \*\* Credit Hours: (3)
- HIAD 8410 - Overview Higher Edu \*\* Credit Hours: (3)
- HIAD 8420 - Legal/Ethical Issues in HIAD \*\* Credit Hours: (3)
- LEAD 7000 - Intro To Educ Ldrshp \*\* Credit Hours: (3)
- EDPR 7121 - Learning & Cognition \*\* Credit Hours: (3)
- ICL 8004 - Innovative Curricula Credit Hours: (3)
- ICL 8054 - Creativity Tchg/Curric Credit Hours: (3)

#### Research Focus Electives:

- HIAD 8403 - Rsrch Hghr/Adult Educ \*\* Credit Hours: (3)
- HIAD 8406 - Designing Research in HIAD Credit Hours: (3)
- PSYC 8309 - Focus Group Research Credit Hours: (3)
- PSYC 8312 - Qualitative Resrch/Psyc Credit Hours: (3)
- EDPR 7512 - Psychomet Thry/Ed Appl Credit Hours: (3)
- EDPR 8511 - Intro Ed and Psych Measurement \*\* Credit Hours: 3
- PUBH 8311 - Appl Categorical Data Analys \*\* Credit Hours: (3)
- ICL 8953 - Writing for Academic Publicatn Credit Hours: (3)
- EDPR 8547 - Survey Research: Sampling Design and Analysis \*\* Credit Hours: (3)

## Health Equity Focus Electives:

- PUBH 8130 - Social Determinants of Health **Credit Hours: (3)**
- HADM 7204 - Healthcare Qual & Outcms Mgmt \*\* **Credit Hours: (3)**
- HADM 7107 - Health Care Ethics **Credit Hours: (3)**

## Dissertation: 12 credit hours

- NURS 9000 - Doctoral Dissertation **Credit Hours: (1-9)**

## PhD Nursing Program Requirements

In addition to completion of the 60 semester hours of required coursework beyond the master's degree or 54 semester hours beyond the Doctorate of Nursing Practice (DNP) degree, program requirements include successful completion of written and oral comprehensive examinations, and the preparation and successful defense of a dissertation in accordance with the University of Memphis Graduate School policies and guidelines.

## For questions about the PhD in Nursing program curriculum, degree requirements, or how to apply?

Dr. Genae Strong  
 Director, PhD Program, Associate Professor  
 gdstrong@memphis.edu

## Philosophy, (PhD)

### PhD Degree Program

Program objectives are: (1) development of expertise in the subject matter to teach a variety of undergraduate courses in area of specialization; (2) development of ability to produce original research papers of sufficient quality for presentation at professional meetings and conferences and publication in professional journals, in addition to ability to impart research skills to students at all levels; (3) ability to contribute to philosophical discussions across the subdivisions of the field; and (4) preparation to assume the role of a philosophy faculty member.

### Program Admission

The Philosophy Department admits students for the fall semester of each academic year. Information and application forms can be found on the department web site. Applications received after January 2nd cannot be guaranteed consideration for an assistantship for the upcoming academic year.

1. The equivalent of the BA degree, usually with a major in philosophy. This must include at least the following courses or their equivalents: intermediate logic, survey of ancient philosophy, survey of modern philosophy, and ethics. Students lacking one or more of these courses may be admitted to the program provisionally, on the condition that they make up the missing course work as soon as possible (graduate credit will not be granted for make-up work).
2. Three letters of recommendation, to be submitted by persons competent to judge the prospective student's ability to undertake graduate work.



3. Transcripts of prior academic work. Unofficial copies should be sent to the Office of Graduate Admissions. A minimum GPA of 3.00 (on a scale of 4.00) will be expected.
4. A 10-20 page writing sample and a 1-2 page personal statement should be submitted.

## Retention Requirements

A student will be retained continuously in the program until completion of the degree providing the following conditions are met:

1. All students will be required to maintain a GPA of at least 3.5. Should the student's GPA fall below that mark, a period of one semester will be allowed to correct the deficiency. At the discretion of the chair and the coordinator of graduate studies, this period may be extended one additional semester.
2. Students will be expected to demonstrate satisfactory progress in fulfilling the graduation requirements outlined below.

## Graduation Requirements

### General Requirements

1. A minimum of 72 hours of graduate credit beyond the bachelor's degree is required. At least 60 hours credit must be at the 7000 level or higher.
2. If a student has completed 18 or more hours of graduate credit at another institution, but did not complete the graduate degree, then at most 18 hours of that work may be transferred and applied towards the 72 hours required for the PhD at Memphis. Only graduate hours that relate in content to the graduate program, and that do not exceed university time restrictions can be transferred.
3. If a student did complete the master's degree in another graduate program, at most 30 hours of graduate credit may be transferred and applied towards the 72 hours required for the PhD at Memphis (whether or not that graduate program required more than 30 hours). Consequently, a minimum of 42 hours of graduate credit is required beyond that master's degree. At least 36 hours of graduate credit must be at the 7000 level or higher. More hours may be required at the discretion of the department's advisory committee.
4. If a student completes the master's degree in philosophy at the University of Memphis and is then accepted in the PhD program at the university 30-33 hours of graduate credit will be accepted towards the 72 hours required (33 hours in case the student did not take the MA thesis option).
5. No more than 18 credit hours of dissertation (PHIL 9000) will count towards satisfying the total number of graduate hours required for the PhD. A minimum of 6 hours of dissertation is required for the PhD.

### Residency Requirements:

At least 24 credit hours must be earned while the student is in continuous residence in the program.

### Distribution Requirements

Core Requirements—Students must take a core of twelve hours in the history of philosophy (at least three in ancient and three in modern), six hours in theoretical philosophy, and six hours in practical philosophy.

### Examination Requirements:

1. Comprehensive Examinations—The Comprehensive Examinations must be taken no later than the student's fourth semester in the program. This examination includes a written part and an oral part and covers the primary area of the student's research interest (i.e., the area in which the student intends to write a dissertation).

- NOTE: It is expected that the doctoral comprehensive examination will be coordinated with the master's comprehensive examination, so that those whose scores fail to qualify them for advanced doctoral study but are sufficient for the master's degree may then complete the requirements for a terminal master's degree.

## Research Tool Requirements:

Students must demonstrate sufficient ability in either (a) one natural language relevant to the student's dissertation area (or two natural languages if the director of the student's dissertation determines that this additional capability is required for successful research in the student's area of specialization) or (b) one non-natural language or research tool (i.e., logic) if such a language or tool is determined to be most useful to the student's area of research.

## Dissertation Requirements

- Dissertation Committee—The student must select a dissertation director. The coordinator of graduate studies in consultation with the graduate faculty will select three additional readers.
- Dissertation Proposal Defense—The student will submit a proposal for the dissertation to the committee and defend the proposal before the graduate faculty. This defense will normally occur before the end of the sixth semester.
- Dissertation Defense—The dissertation committee will schedule a defense of the completed dissertation in coordination with the chair and the coordinator of graduate studies. Notice will be given, copies of the dissertation made available, and a public oral defense of the dissertation will be held. Upon approval of the dissertation committee and faculty, the dissertation will be submitted to the Graduate School and the degree awarded.
- Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write.

## Psychology - Clinical Psychology, (PhD)

### MS/PhD Degree Program

There are three broad programs within the MS/PhD degree program: Clinical Psychology (APA accredited), School Psychology (APA accredited), and Experimental Psychology. Across these doctoral programs, faculty and students participate in five research areas: Clinical Health Psychology; Behavioral Neuroscience; Child and Family Studies; Cognitive Psychology; and Psychotherapy Research. Students interested in other areas should contact the department for further information.

In each of these programs, the MS is preparatory to continuation in the program. In order to be advanced to doctoral study, a student must have satisfactorily completed all requirements for the MS (including a thesis that is empirical and psychological) at The University of Memphis, or have completed an equivalent degree, with empirical thesis, from another institution. Students possessing a master's degree without a thesis will be required to complete a thesis before being advanced to doctoral study.

Across the MS/PhD degree programs, the general training objectives are: (1) understanding of theoretical principles and practices of psychology; (2) development of expertise in experimental design, data analysis, and oral and written presentation of research results; and (3) being competitive for professional positions in psychology.

### Program Admission and Prerequisites

Applications for each of the MS/PhD degree programs are reviewed once each year for admission in the following Fall semester. Applications for Spring admission are not considered. All application information must have been received by December 1 for an applicant to be considered for admission to the MS/PhD program in Clinical Psychology, by January 15 for an applicant to be considered for admission to the MS/PhD program in Experimental Psychology, and by December 15 for an applicant to be considered for admission to the MS/PhD program in the MS/PhD program in School Psychology. The following items are required for admission:

1. A completed application form accessed at: [https://www.memphis.edu/graduateadmissions/future/apply\\_grad.php?\\_ga=2.73980187.883202891.1631392280-1851666633.1553045734](https://www.memphis.edu/graduateadmissions/future/apply_grad.php?_ga=2.73980187.883202891.1631392280-1851666633.1553045734).
2. An official transcript of all undergraduate and graduate coursework must be sent.
3. A minimum of 18 semester hours in undergraduate psychology courses, including courses in Quantitative Methods (Psychological Statistics) and Experimental Design. Students lacking some or all of these prerequisite courses, but presenting an exceptional undergraduate record, may nevertheless be granted graduate admission. However, students may be asked to remove such deficiencies before or during their first academic year.
4. GRE scores are not required and should not be submitted.
5. Letters of recommendation from at least three persons familiar with the applicant's academic background and aptitude for graduate work in psychology, specifying in detail the applicant's capabilities for graduate study and for future performance as a psychologist.
6. An essay of approximately 1500 words indicating the specific graduate program being applied to, and describing the applicant's prior research and applied experience, current research and applied interests, and career goals. Prior research involvement is weighted heavily.
7. A willingness to be interviewed in person or by phone by members of the department faculty, should that be requested.
8. Further information about applying may be found at: <https://www.memphis.edu/psychology/graduate/apply.php>.

## Program Requirements

### Credit Hours:

A minimum of 33 semester hours of graduate credit beyond the bachelor's degree is required for the MS degree in Psychology, and a minimum of 80 semester hours of graduate credit beyond the bachelor's degree is required for the PhD degree in Psychology. All work for graduate credit must be approved by, and must be completed at a level of performance satisfactory to the graduate faculty of the department. Students also may take coursework for degree credit outside the department with program approval.

### Transfer Credit:

Students with graduate credits earned at another institution, upon matriculation at The University of Memphis, may petition to have these credits applied toward the total number of hours required to earn their degree at The University of Memphis and to use transfer credits as substitutes for specific courses required for the degree. Decisions about such substitutions are made by the psychology department Graduate Coordinator. The number of transfer credits accepted as substitutions for specific courses varies by degree program. Substitutions are not granted for any of the Clinical Psychology program's core curriculum.

### Enrollment:

MS/ PhD degree candidates are expected to carry a minimum of 9 credits per semester and to devote full time during their enrollment to pursuit of degree-related activities.

### Research:

All MS/PhD degree students are expected to be active in research collaboratively with members of the department faculty each semester they are enrolled.

### Master's Thesis and Comprehensive Examination:

Each PhD student is expected to complete an independent research project, culminating in a master's thesis. The thesis is intended to be a demonstration of the student's ability to plan, organize, conduct, and report a research/scholarly project. Students should

familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write. Only 3 hours of thesis credit (PSYC 7996) can count toward the degree. Upon completion of the thesis, the student takes an oral examination that assesses not only mastery of the thesis topic but also broader awareness of the theoretical and empirical issues in contemporary psychology. This oral examination serves as the MS comprehensive examination.

## Second Milestone Project:

After completing the requirements of the master's thesis, all PhD students will complete a second milestone, usually in the third year of graduate work, which varies by graduate program in Psychology. Students in the Experimental Psychology PhD program can satisfy this requirement with a (a) a Specialty Examination;(b) a Major Area Paper (MAP); (c) a grant proposal with the student as Principal Investigator submitted for review; or (d) an empirical manuscript submitted for publication. All alternatives require committees (three faculty members), proposal defenses, and final defenses.

## Comprehensive Educational Requirements:

### All MS/PhD students are required to complete

All MS/PhD students are required to complete PSYC 7301/PSYC 8301, and PSYC 7302/PSYC 8302 during the first two years. With permission of the Major Professor and Graduate Coordinator, students may substitute PSYC 7303/PSYC 8303 for PSYC 7302/PSYC 8302 as their required course. Clinical Psychology and School Psychology MS/PhD students are required to complete PSYC 7000/PSYC 8000. Also, for both semesters in the first year, all MS/PhD students must attend weekly colloquium series to acquaint them with issues of research and professional ethics and professional opportunities in the department and in the discipline.

- PSYC 7301 - Research Design & Meth Credit Hours: (3)
- PSYC 8301 - Research Design & Meth Credit Hours: (3)
- PSYC 7302 - Adv Statistics Psych I Credit Hours: (3)
- PSYC 8302 - Adv Statistics Psych I Credit Hours: (3)
- PSYC 7303 - Adv Statistics Psych II Credit Hours: (3)
- PSYC 8303 - Adv Statistics Psych II Credit Hours: (3)

### Must complete two additional

All MS/PhD students must complete two additional statistics/quantitative/methodology course from the following list (or a substituted course approved by the student's major professor and the Graduate Coordinator):

- PSYC 7303 - Adv Statistics Psych II Credit Hours: (3)
- PSYC 8303 - Adv Statistics Psych II Credit Hours: (3)
- PSYC 7304 - Meas Th & Psychomet Credit Hours: (3)
- PSYC 8304 - Meas Th & Psychomet Credit Hours: (3)
- PSYC 7305 - Quant Meth Review Rsch Credit Hours: (3)
- PSYC 8305 - Quant Meth Review Rsch Credit Hours: (3)
- PSYC 7306 - Linear Struct Modeling Credit Hours: (3)
- PSYC 8306 - Linear Struct Modeling Credit Hours: (3)
- PSYC 7307 - Models Program Eval Credit Hours: (3)
- PSYC 8307 - Models Program Eval Credit Hours: (3)
- PSYC 7308 - Appl Multivariate Stat Credit Hours: (3)
- PSYC 8308 - Appl Multivariate Stat Credit Hours: (3)

- PSYC 7310 - Mixed-Model Regress Anly Credit Hours: (3)
- PSYC 8310 - Mixed-Model Regress Anly Credit Hours: (3)
- PSYC 7311 - Appl Cat Data Analysis Credit Hours: (3)
- PSYC 8311 - Appl Cat Data Analysis Credit Hours: (3)
- PSYC 7312 - Qualitative Resrch/Psyc Credit Hours: (3)
- PSYC 8312 - Qualitative Resrch/Psyc Credit Hours: (3)

Must complete at least one course in each of the following areas

All MS/PhD students (except for students in the cognitive doctoral program) must complete at least one course in each of the following areas (or a substituted course approved by the student's major professor and the Graduate Coordinator). Restrictions for Clinical and School Psychology students exist. Required courses for cognitive doctoral students may be found under the Experimental student requirements.

Biological Bases of Behavior:

- PSYC 7441 - Psyc/Medical Illness Credit Hours: (3)
- PSYC 8441 - Psyc/Medical Illness Credit Hours: (3)
- PSYC 7701 - Behavioral Neuroscience Credit Hours: (3)
- PSYC 8701 - Behavioral Neuroscience Credit Hours: (3)
- PSYC 7705 - Neuropsychopharmacology Credit Hours: (3)
- PSYC 8705 - Neuropsychopharmacology Credit Hours: (3)

Cognitive-Affective Bases of Behavior:

- PSYC 7208 - Psyc Of Perception Credit Hours: (3)
- PSYC 8208 - Psyc Of Perception Credit Hours: (3)
- PSYC 7211 - Cognitive Processes Credit Hours: (3)
- PSYC 8211 - Cognitive Processes Credit Hours: (3)
- PSYC 7222 - Psychology Human Memory Credit Hours: (3)
- PSYC 8222 - Psychology Human Memory Credit Hours: (3)
- PSYC 7407 - Cognition & Emotion Credit Hours: (3)
- PSYC 8407 - Cognition & Emotion Credit Hours: (3)

Social Bases of Behavior:

- PSYC 7215 - Organizational Psyc Credit Hours: (3)
- PSYC 8215 - Organizational Psyc Credit Hours: (3)
- PSYC 7217 - Social Psychology Credit Hours: (3)
- PSYC 8217 - Social Psychology Credit Hours: (3)
- PSYC 7219 - Soc/Persnlty Devel Credit Hours: (3)
- PSYC 8219 - Soc/Persnlty Devel Credit Hours: (3)
- PSYC 7220 - Social Cognition Credit Hours: (3)
- PSYC 8220 - Social Cognition Credit Hours: (3)

Individual Bases of Behavior:

- PSYC 7207 - Developmental Psyc Credit Hours: (3)
- PSYC 8207 - Developmental Psyc Credit Hours: (3)
- PSYC 7219 - Soc/Persnlty Devel Credit Hours: (3)
- PSYC 8219 - Soc/Persnlty Devel Credit Hours: (3)
- PSYC 7412 - Psychopathology Credit Hours: (3)
- PSYC 8412 - Psychopathology Credit Hours: (3)
- PSYC 7416 - Child Psychopathology Credit Hours: (3)
- PSYC 8416 - Child Psychopathology Credit Hours: (3)
- PSYC 7420 - Personal Construct Thry Credit Hours: (3)
- PSYC 8420 - Personal Construct Thry Credit Hours: (3)
- PSYC 7516 - Issues PsychothrpY Rsch Credit Hours: (3)
- PSYC 8516 - Issues PsychothrpY Rsch Credit Hours: (3)

### Dissertation and Final Examination:

The dissertation is viewed as the capstone of the student's academic training, reflecting the student's capacity for independent research. Dissertation credit hours (PSYC 9000) must be taken for a minimum of 6 hours and can be taken for a maximum of 9 credit hours. Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write. Upon completion of an independent written dissertation research project acceptable to the faculty, each student will take a final oral examination oriented toward, but not exclusively on, the student's dissertation research and major area of specialization.

- PSYC 9000 - Dissertation Credit Hours: (1-9)

### Clinical Psychology:

Students in the Clinical Psychology program must meet these additional requirements:

### Additional Courses and Activities

Additional Courses and Activities — PSYC 7207/PSYC 8207, PSYC 7217/PSYC 8217, PSYC 7407/PSYC 8407, PSYC 7412/PSYC 8412, PSYC 7428/PSYC 8428, PSYC 7430/PSYC 8430, PSYC 7432/PSYC 8432, PSYC 7435/PSYC 8435, PSYC 7705/PSYC 8705, 2 credits of PSYC 8707 and 6 credit hours of PSYC 7434/PSYC 8434 (including two courses of 3 hours credit each, with one course focusing on therapy with diverse populations). As part of their clinical training, students must also participate in the activities of the Psychological Services Center. To fulfill this requirement, students enroll in PSYC 7438/PSYC 8438 for a minimum of 6 semesters.

- PSYC 7207 - Developmental Psyc Credit Hours: (3)
- PSYC 8207 - Developmental Psyc Credit Hours: (3)
- PSYC 7217 - Social Psychology Credit Hours: (3)
- PSYC 8217 - Social Psychology Credit Hours: (3)
- PSYC 7407 - Cognition & Emotion Credit Hours: (3)
- PSYC 8407 - Cognition & Emotion Credit Hours: (3)
- PSYC 7412 - Psychopathology Credit Hours: (3)
- PSYC 8412 - Psychopathology Credit Hours: (3)

- PSYC 7428 - Foundatns Clinical Psyc Credit Hours: (3)
- PSYC 8428 - Foundatns Clinical Psyc Credit Hours: (3)
  
- PSYC 7430 - Clin Assessment/Ability Credit Hours: (3)
- PSYC 8430 - Clin Assessment/Ability Credit Hours: (3)
  
- PSYC 7432 - Clinic Asses/Case Cncpt Credit Hours: (3)
- PSYC 8432 - Clinic Asses/Case Cncpt Credit Hours: (3)
  
- PSYC 7435 - Intro To Psychotherapy Credit Hours: (1-3)
- PSYC 8435 - Intro To Psychotherapy Credit Hours: (1-3)
  
- PSYC 7705 - Neuropsychopharmacology Credit Hours: (3)
- PSYC 8705 - Neuropsychopharmacology Credit Hours: (3)
  
- PSYC 8707 - Professional Issues Credit Hours: (1)
  
- PSYC 7434 - Clin Psychotherapies Credit Hours: (3)
- PSYC 8434 - Clin Psychotherapies Credit Hours: (3)
  
- PSYC 7438 - Pract Clinical Trtmt Credit Hours: (1-3)
- PSYC 8438 - Pract Clinical Trtmt Credit Hours: (1-3)

## During their time in the graduate program

During their time in the graduate program, Clinical Psychology students receiving department funding may be placed on a department assistantship, grant-funded assistantship, or clinical agency placement. The student is required to complete a minimum of 12 months of 20 hours per week (or the equivalent) in a clinical placement before graduation (i.e., 10 hours per week over 24 months).

## Students are also required to complete

Students are also required to complete a minimum of 12 months of 20 hours per week in a research assistantship after their first year in the doctoral program. The research assistantship may be served in a community research facility or in the psychology department.

## Research Area Course Requirements:

In addition to the general clinical requirements, clinical psychology program students in the following Research Areas must complete the courses listed below

### Clinical Health Research area

Clinical Psychology students in the Clinical Health Research area must complete two of the following courses: PSYC 7440/PSYC 8440, PSYC 7441/PSYC 8441, or sections of PSYC 7434/PSYC 8434 focused on cognitive-behavior therapy, clinical health psychology (e.g., therapy with medical patients, changing health risk behaviors, and pediatric psychology).

Further, a major portion of clinical practica, the master's thesis, the doctoral dissertation, and the internship must pertain to clinical health.

- PSYC 7440 - Behavioral Medicine I **Credit Hours: (3)**
- PSYC 8440 - Behavioral Medicine I **Credit Hours: (3)**
  
- PSYC 7441 - Psyc/Medical Illness **Credit Hours: (3)**
- PSYC 8441 - Psyc/Medical Illness **Credit Hours: (3)**
  
- PSYC 7434 - Clin Psychotherapies **Credit Hours: (3)**
- PSYC 8434 - Clin Psychotherapies **Credit Hours: (3)**

### Child and Family Studies Research area

Clinical Psychology students in the Child and Family Studies Research area must complete PSYC 7416/PSYC 8416; a section of PSYC 7434/PSYC 8434 focused on children, adolescents, or families; and one other course focused on children or families (e.g., PSYC 7207/PSYC 8207, PSYC 7219/PSYC 8219, PSYC 7701/PSYC 8701, PSYC 7705/PSYC 8705, PSYC 7808/PSYC 8808). They must also attend the Child and Family Colloquium. A major portion of practicum work must involve children, and the master's thesis and doctoral dissertation must pertain to children or families.

- PSYC 7416 - Child Psychopathology **Credit Hours: (3)**
- PSYC 8416 - Child Psychopathology **Credit Hours: (3)**
  
- PSYC 7434 - Clin Psychotherapies **Credit Hours: (3)**
- PSYC 8434 - Clin Psychotherapies **Credit Hours: (3)**
  
- PSYC 7207 - Developmental Psyc **Credit Hours: (3)**
- PSYC 8207 - Developmental Psyc **Credit Hours: (3)**
  
- PSYC 7219 - Soc/Persnlty Devel **Credit Hours: (3)**
- PSYC 8219 - Soc/Persnlty Devel **Credit Hours: (3)**
  
- PSYC 7701 - Behavioral Neuroscience **Credit Hours: (3)**
- PSYC 8701 - Behavioral Neuroscience **Credit Hours: (3)**
  
- PSYC 7705 - Neuropsychopharmacology **Credit Hours: (3)**
- PSYC 8705 - Neuropsychopharmacology **Credit Hours: (3)**
  
- PSYC 7808 - Psychoed Assessmnt III **Credit Hours: (3)**
- PSYC 8808 - Psychoed Assessment III **Credit Hours: (3)**

### Psychotherapy Research area

Clinical Psychology students in the Psychotherapy Research area must also complete PSYC 7516/PSYC 8516. In addition, students must complete a third section of PSYC 7438/PSYC 8438 and the student's specialty exam and dissertation must relate to psychotherapy.

- PSYC 7516 - Issues Psychothrpyp Rsch **Credit Hours: (3)**



- PSYC 8516 - Issues Psychothrpy Rsch **Credit Hours: (3)**
- PSYC 7438 - Pract Clinical Trtmt **Credit Hours: (1-3)**
- PSYC 8438 - Pract Clinical Trtmt **Credit Hours: (1-3)**

## Clinical Internship:

A full-time one-year internship, in an agency approved by the director of training in clinical psychology, is required. Permission from the clinical faculty must be secured before making application for internship. To be approved, the clinical faculty must judge the student to be academically and clinically ready for the internship. In addition, the student must have successfully defended the second milestone requirement by May 31 and the dissertation proposal by September 15 of the year in which they are applying for internship.

## Psychology - Experimental Psychology, (PhD)

### MS/PhD Degree Program

There are three broad programs within the MS/PhD degree program: Clinical Psychology (APA accredited), School Psychology (APA accredited), and Experimental Psychology. Across these doctoral programs, faculty and students participate in five research areas: Clinical Health Psychology; Behavioral Neuroscience; Child and Family Studies; Cognitive Psychology; and Psychotherapy Research. Students interested in other areas should contact the department for further information.

In each of these programs, the MS is preparatory to continuation in the program. In order to be advanced to doctoral study, a student must have satisfactorily completed all requirements for the MS (including a thesis that is empirical and psychological) at The University of Memphis, or have completed an equivalent degree, with empirical thesis, from another institution. Students possessing a master's degree without a thesis will be required to complete a thesis before being advanced to doctoral study.

Across the MS/PhD degree programs, the general training objectives are: (1) understanding of theoretical principles and practices of psychology; (2) development of expertise in experimental design, data analysis, and oral and written presentation of research results; and (3) being competitive for professional positions in psychology.

### Program Admission and Prerequisites

Applications for each of the MS/PhD degree programs are reviewed once each year for admission in the following Fall semester. Applications for Spring admission are not considered. All application information must have been received by December 1 for an applicant to be considered for admission to the MS/PhD program in Clinical Psychology, by January 15 for an applicant to be considered for admission to the MS/PhD program in Experimental Psychology, and by December 15 for an applicant to be considered for admission to the MS/PhD program in the MS/PhD program in School Psychology. The following items are required for admission:

1. A completed application form accessed at: [https://www.memphis.edu/graduateadmissions/future/apply\\_grad.php?\\_ga=2.73980187.883202891.1631392280-1851666633.1553045734](https://www.memphis.edu/graduateadmissions/future/apply_grad.php?_ga=2.73980187.883202891.1631392280-1851666633.1553045734).
2. An official transcript of all undergraduate and graduate coursework must be sent.
3. A minimum of 18 semester hours in undergraduate psychology courses, including courses in Quantitative Methods (Psychological Statistics) and Experimental Design. Students lacking some or all of these prerequisite courses, but presenting an exceptional undergraduate record, may nevertheless be granted graduate admission. However, students may be asked to remove such deficiencies before or during their first academic year.
4. GRE scores are not required and should not be submitted.

5. Letters of recommendation from at least three persons familiar with the applicant's academic background and aptitude for graduate work in psychology, specifying in detail the applicant's capabilities for graduate study and for future performance as a psychologist.
6. An essay of approximately 1500 words indicating the specific graduate program being applied to, and describing the applicant's prior research and applied experience, current research and applied interests, and career goals. Prior research involvement is weighted heavily.
7. A willingness to be interviewed in person or by phone by members of the department faculty, should that be requested.
8. Further information about applying may be found at: <https://www.memphis.edu/psychology/graduate/apply.php>.

## Program Requirements

### Credit Hours:

A minimum of 33 semester hours of graduate credit beyond the bachelor's degree is required for the MS degree in Psychology, and a minimum of 80 semester hours of graduate credit beyond the bachelor's degree is required for the PhD degree in Psychology. All work for graduate credit must be approved by, and must be completed at a level of performance satisfactory to the graduate faculty of the department. Students also may take coursework for degree credit outside the department with program approval.

### Transfer Credit:

Students with graduate credits earned at another institution, upon matriculation at The University of Memphis, may petition to have these credits applied toward the total number of hours required to earn their degree at The University of Memphis and to use transfer credits as substitutes for specific courses required for the degree. Decisions about such substitutions are made by the psychology department Graduate Coordinator. The number of transfer credits accepted as substitutions for specific courses varies by degree program. Substitutions are not granted for any of the Clinical Psychology program's core curriculum.

### Enrollment:

MS/ PhD degree candidates are expected to carry a minimum of 9 credits per semester and to devote full time during their enrollment to pursuit of degree-related activities.

### Research:

All MS/PhD degree students are expected to be active in research collaboratively with members of the department faculty each semester they are enrolled.

### Master's Thesis and Comprehensive Examination:

Each PhD student is expected to complete an independent research project, culminating in a master's thesis. The thesis is intended to be a demonstration of the student's ability to plan, organize, conduct, and report a research/scholarly project. Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write. Only 3 hours of thesis credit (PSYC 7996) can count toward the degree. Upon completion of the thesis, the student takes an oral examination that assesses not only mastery of the thesis topic but also broader awareness of the theoretical and empirical issues in contemporary psychology. This oral examination serves as the MS comprehensive examination.

### Second Milestone Project:

After completing the requirements of the master's thesis, all PhD students will complete a second milestone, usually in the third year of graduate work, which varies by graduate program in Psychology. Students in the Experimental Psychology PhD program can satisfy this requirement with a (a) a Specialty Examination;(b) a Major Area Paper (MAP); (c) a grant proposal with the student as Principal Investigator submitted for review; or (d) an empirical manuscript submitted for publication. All alternatives require committees (three faculty members), proposal defenses, and final defenses.

## Comprehensive Educational Requirements:

### All MS/PhD students are required to complete

All MS/PhD students are required to complete PSYC 7301/PSYC 8301, and PSYC 7302/PSYC 8302 during the first two years. With permission of the Major Professor and Graduate Coordinator, students may substitute PSYC 7303/PSYC 8303 for PSYC 7302/PSYC 8302 as their required course. Clinical Psychology and School Psychology MS/PhD students are required to complete PSYC 7000/PSYC 8000. Also, for both semesters in the first year, all MS/PhD students must attend weekly colloquium series to acquaint them with issues of research and professional ethics and professional opportunities in the department and in the discipline.

- PSYC 7301 - Research Design & Meth Credit Hours: (3)
- PSYC 8301 - Research Design & Meth Credit Hours: (3)
- PSYC 7302 - Adv Statistics Psych I Credit Hours: (3)
- PSYC 8302 - Adv Statistics Psych I Credit Hours: (3)
- PSYC 7303 - Adv Statistics Psych II Credit Hours: (3)
- PSYC 8303 - Adv Statistics Psych II Credit Hours: (3)

### Must complete two additional

All MS/PhD students must complete two additional statistics/quantitative/methodology course from the following list (or a substituted course approved by the student's major professor and the Graduate Coordinator):

- PSYC 7303 - Adv Statistics Psych II Credit Hours: (3)
- PSYC 8303 - Adv Statistics Psych II Credit Hours: (3)
- PSYC 7304 - Meas Th & Psychomet Credit Hours: (3)
- PSYC 8304 - Meas Th & Psychomet Credit Hours: (3)
- PSYC 7305 - Quant Meth Review Rsch Credit Hours: (3)
- PSYC 8305 - Quant Meth Review Rsch Credit Hours: (3)
- PSYC 7306 - Linear Struct Modeling Credit Hours: (3)
- PSYC 8306 - Linear Struct Modeling Credit Hours: (3)
- PSYC 7307 - Models Program Eval Credit Hours: (3)
- PSYC 8307 - Models Program Eval Credit Hours: (3)
- PSYC 7308 - Appl Multivariate Stat Credit Hours: (3)
- PSYC 8308 - Appl Multivariate Stat Credit Hours: (3)
- PSYC 7310 - Mixed-Model Regress Anly Credit Hours: (3)
- PSYC 8310 - Mixed-Model Regress Anly Credit Hours: (3)
- PSYC 7311 - Appl Cat Data Analysis Credit Hours: (3)
- PSYC 8311 - Appl Cat Data Analysis Credit Hours: (3)
- PSYC 7312 - Qualitative Resrch/Psyc Credit Hours: (3)
- PSYC 8312 - Qualitative Resrch/Psyc Credit Hours: (3)

## Must complete at least one course in each of the following areas

All MS/PhD students (except for students in the cognitive doctoral program) must complete at least one course in each of the following areas (or a substituted course approved by the student's major professor and the Graduate Coordinator). Restrictions for Clinical and School Psychology students exist. Required courses for cognitive doctoral students may be found under the Experimental student requirements.

### Biological Bases of Behavior:

- PSYC 7441 - Psyc/Medical Illness Credit Hours: (3)
- PSYC 8441 - Psyc/Medical Illness Credit Hours: (3)
- PSYC 7701 - Behavioral Neuroscience Credit Hours: (3)
- PSYC 8701 - Behavioral Neuroscience Credit Hours: (3)
- PSYC 7705 - Neuropsychopharmacology Credit Hours: (3)
- PSYC 8705 - Neuropsychopharmacology Credit Hours: (3)

### Cognitive-Affective Bases of Behavior:

- PSYC 7208 - Psyc Of Perception Credit Hours: (3)
- PSYC 8208 - Psyc Of Perception Credit Hours: (3)
- PSYC 7211 - Cognitive Processes Credit Hours: (3)
- PSYC 8211 - Cognitive Processes Credit Hours: (3)
- PSYC 7222 - Psychology Human Memory Credit Hours: (3)
- PSYC 8222 - Psychology Human Memory Credit Hours: (3)
- PSYC 7407 - Cognition & Emotion Credit Hours: (3)
- PSYC 8407 - Cognition & Emotion Credit Hours: (3)

### Social Bases of Behavior:

- PSYC 7215 - Organizational Psyc Credit Hours: (3)
- PSYC 8215 - Organizational Psyc Credit Hours: (3)
- PSYC 7217 - Social Psychology Credit Hours: (3)
- PSYC 8217 - Social Psychology Credit Hours: (3)
- PSYC 7219 - Soc/Persnlty Devel Credit Hours: (3)
- PSYC 8219 - Soc/Persnlty Devel Credit Hours: (3)
- PSYC 7220 - Social Cognition Credit Hours: (3)
- PSYC 8220 - Social Cognition Credit Hours: (3)

### Individual Bases of Behavior:

- PSYC 7207 - Developmental Psyc Credit Hours: (3)
- PSYC 8207 - Developmental Psyc Credit Hours: (3)
- PSYC 7219 - Soc/Persnlty Devel Credit Hours: (3)
- PSYC 8219 - Soc/Persnlty Devel Credit Hours: (3)
- PSYC 7412 - Psychopathology Credit Hours: (3)
- PSYC 8412 - Psychopathology Credit Hours: (3)

- PSYC 7416 - Child Psychopathology **Credit Hours: (3)**
- PSYC 8416 - Child Psychopathology **Credit Hours: (3)**
- PSYC 7420 - Personal Construct Thry **Credit Hours: (3)**
- PSYC 8420 - Personal Construct Thry **Credit Hours: (3)**
- PSYC 7516 - Issues PsychothrpY Rsch **Credit Hours: (3)**
- PSYC 8516 - Issues PsychothrpY Rsch **Credit Hours: (3)**

## Dissertation and Final Examination:

The dissertation is viewed as the capstone of the student's academic training, reflecting the student's capacity for independent research. Dissertation credit hours (PSYC 9000) must be taken for a minimum of 6 hours and can be taken for a maximum of 9 credit hours. Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write. Upon completion of an independent written dissertation research project acceptable to the faculty, each student will take a final oral examination oriented toward, but not exclusively on, the student's dissertation research and major area of specialization.

- PSYC 9000 - Dissertation **Credit Hours: (1-9)**

## Cognitive Psychology Sequence

Below is the 4-course cognitive psychology sequence required for all students in the Cognitive Area of the Experimental Doctoral Program. This sequence substitutes for the 4-course breadth requirement (i.e., Biological, Individual, Social, and Cognitive/Affective Bases of Behavior

- PSYC 7530/8530 - Psychology of Language
- PSYC 7222/8222 - Psychology Human Memory and Learning
- PSYV 7213/8213 - Cognitive Science
- PSYC 7313/8313 - Computational Models Cog Sci

## Psychology - School Psychology, (PhD)

### MS/PhD Degree Program

There are three broad programs within the MS/PhD degree program: Clinical Psychology (APA accredited), School Psychology (APA accredited), and Experimental Psychology. Across these doctoral programs, faculty and students participate in five research areas: Clinical Health Psychology; Behavioral Neuroscience; Child and Family Studies; Cognitive Psychology; and Psychotherapy Research. Students interested in other areas should contact the department for further information.

In each of these programs, the MS is preparatory to continuation in the program. In order to be advanced to doctoral study, a student must have satisfactorily completed all requirements for the MS (including a thesis that is empirical and psychological) at The University of Memphis, or have completed an equivalent degree, with empirical thesis, from another institution. Students possessing a master's degree without a thesis will be required to complete a thesis before being advanced to doctoral study.

Across the MS/PhD degree programs, the general training objectives are: (1) understanding of theoretical principles and practices of psychology; (2) development of expertise in experimental design, data analysis, and oral and written presentation of research results; and (3) being competitive for professional positions in psychology.

### Program Admission and Prerequisites

Applications for each of the MS/PhD degree programs are reviewed once each year for admission in the following Fall semester. Applications for Spring admission are not considered. All application information must have been received by December 1 for an applicant to be considered for admission to the MS/PhD program in Clinical Psychology, by January 15 for an applicant to be considered for admission to the MS/PhD program in Experimental Psychology, and by December 15 for an applicant to be considered for admission to the MS/PhD program in the MS/PhD program in School Psychology. The following items are required for admission:

1. A completed application form accessed at: [https://www.memphis.edu/graduateadmissions/future/apply\\_grad.php?\\_ga=2.73980187.883202891.1631392280-1851666633.1553045734](https://www.memphis.edu/graduateadmissions/future/apply_grad.php?_ga=2.73980187.883202891.1631392280-1851666633.1553045734).
2. An official transcript of all undergraduate and graduate coursework must be sent.
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4. GRE scores are not required and should not be submitted.
5. Letters of recommendation from at least three persons familiar with the applicant's academic background and aptitude for graduate work in psychology, specifying in detail the applicant's capabilities for graduate study and for future performance as a psychologist.
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7. A willingness to be interviewed in person or by phone by members of the department faculty, should that be requested.
8. Further information about applying may be found at: <https://www.memphis.edu/psychology/graduate/apply.php>.

## Program Requirements

### Credit Hours:

A minimum of 33 semester hours of graduate credit beyond the bachelor's degree is required for the MS degree in Psychology, and a minimum of 80 semester hours of graduate credit beyond the bachelor's degree is required for the PhD degree in Psychology. All work for graduate credit must be approved by, and must be completed at a level of performance satisfactory to the graduate faculty of the department. Students also may take coursework for degree credit outside the department with program approval.

### Transfer Credit:

Students with graduate credits earned at another institution, upon matriculation at The University of Memphis, may petition to have these credits applied toward the total number of hours required to earn their degree at The University of Memphis and to use transfer credits as substitutes for specific courses required for the degree. Decisions about such substitutions are made by the psychology department Graduate Coordinator. The number of transfer credits accepted as substitutions for specific courses varies by degree program. Substitutions are not granted for any of the Clinical Psychology program's core curriculum.

### Enrollment:

MS/ PhD degree candidates are expected to carry a minimum of 9 credits per semester and to devote full time during their enrollment to pursuit of degree-related activities.

### Research:

All MS/PhD degree students are expected to be active in research collaboratively with members of the department faculty each semester they are enrolled.

### Master's Thesis and Comprehensive Examination:

Each PhD student is expected to complete an independent research project, culminating in a master's thesis. The thesis is intended to be a demonstration of the student's ability to plan, organize, conduct, and report a research/scholarly project. Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write. Only 3 hours of thesis credit (PSYC 7996) can count toward the degree. Upon completion of the thesis, the student takes an oral examination that assesses not only mastery of the thesis topic but also broader awareness of the theoretical and empirical issues in contemporary psychology. This oral examination serves as the MS comprehensive examination.

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After completing the requirements of the master's thesis, all PhD students will complete a second milestone, usually in the third year of graduate work, which varies by graduate program in Psychology. Students in the Experimental Psychology PhD program can satisfy this requirement with a (a) a Specialty Examination;(b) a Major Area Paper (MAP); (c) a grant proposal with the student as Principal Investigator submitted for review; or (d) an empirical manuscript submitted for publication. All alternatives require committees (three faculty members), proposal defenses, and final defenses.

### Comprehensive Educational Requirements:

All MS/PhD students are required to complete

All MS/PhD students are required to complete PSYC 7301/PSYC 8301, and PSYC 7302/PSYC 8302 during the first two years. With permission of the Major Professor and Graduate Coordinator, students may substitute PSYC 7303/PSYC 8303 for PSYC 7302/PSYC 8302 as their required course. Clinical Psychology and School Psychology MS/PhD students are required to complete PSYC 7000/PSYC 8000. Also, for both semesters in the first year, all MS/PhD students must attend weekly colloquium series to acquaint them with issues of research and professional ethics and professional opportunities in the department and in the discipline.

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Must complete two additional

All MS/PhD students must complete two additional statistics/quantitative/methodology course from the following list (or a substituted course approved by the student's major professor and the Graduate Coordinator):

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- PSYC 7306 - Linear Struct Modeling Credit Hours: (3)
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- PSYC 8308 - Appl Multivariate Stat Credit Hours: (3)
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- PSYC 8310 - Mixed-Model Regress Anly Credit Hours: (3)
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- PSYC 8311 - Appl Cat Data Analysis Credit Hours: (3)
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- PSYC 8312 - Qualitative Resrch/Psyc Credit Hours: (3)

Must complete at least one course in each of the following areas

All MS/PhD students (except for students in the cognitive doctoral program) must complete at least one course in each of the following areas (or a substituted course approved by the student's major professor and the Graduate Coordinator). Restrictions for Clinical and School Psychology students exist. Required courses for cognitive doctoral students may be found under the Experimental student requirements.

Biological Bases of Behavior:

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- PSYC 7701 - Behavioral Neuroscience Credit Hours: (3)
- PSYC 8701 - Behavioral Neuroscience Credit Hours: (3)
- PSYC 7705 - Neuropsychopharmacology Credit Hours: (3)
- PSYC 8705 - Neuropsychopharmacology Credit Hours: (3)

Cognitive-Affective Bases of Behavior:

- PSYC 7208 - Psyc Of Perception Credit Hours: (3)
- PSYC 8208 - Psyc Of Perception Credit Hours: (3)
- PSYC 7211 - Cognitive Processes Credit Hours: (3)
- PSYC 8211 - Cognitive Processes Credit Hours: (3)
- PSYC 7222 - Psychology Human Memory Credit Hours: (3)
- PSYC 8222 - Psychology Human Memory Credit Hours: (3)
- PSYC 7407 - Cognition & Emotion Credit Hours: (3)
- PSYC 8407 - Cognition & Emotion Credit Hours: (3)

Social Bases of Behavior:

- PSYC 7215 - Organizational Psyc Credit Hours: (3)
- PSYC 8215 - Organizational Psyc Credit Hours: (3)
- PSYC 7217 - Social Psychology Credit Hours: (3)



- PSYC 8217 - Social Psychology **Credit Hours: (3)**
- PSYC 7219 - Soc/Persnlty Devel **Credit Hours: (3)**
- PSYC 8219 - Soc/Persnlty Devel **Credit Hours: (3)**
- PSYC 7220 - Social Cognition **Credit Hours: (3)**
- PSYC 8220 - Social Cognition **Credit Hours: (3)**

#### Individual Bases of Behavior:

- PSYC 7207 - Developmental Psyc **Credit Hours: (3)**
- PSYC 8207 - Developmental Psyc **Credit Hours: (3)**
- PSYC 7219 - Soc/Persnlty Devel **Credit Hours: (3)**
- PSYC 8219 - Soc/Persnlty Devel **Credit Hours: (3)**
- PSYC 7412 - Psychopathology **Credit Hours: (3)**
- PSYC 8412 - Psychopathology **Credit Hours: (3)**
- PSYC 7416 - Child Psychopathology **Credit Hours: (3)**
- PSYC 8416 - Child Psychopathology **Credit Hours: (3)**
- PSYC 7420 - Personal Construct Thry **Credit Hours: (3)**
- PSYC 8420 - Personal Construct Thry **Credit Hours: (3)**
- PSYC 7516 - Issues PsychothrpY Rsch **Credit Hours: (3)**
- PSYC 8516 - Issues PsychothrpY Rsch **Credit Hours: (3)**

#### Dissertation and Final Examination:

The dissertation is viewed as the capstone of the student's academic training, reflecting the student's capacity for independent research. Dissertation credit hours (PSYC 9000) must be taken for a minimum of 6 hours and can be taken for a maximum of 9 credit hours. Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write. Upon completion of an independent written dissertation research project acceptable to the faculty, each student will take a final oral examination oriented toward, but not exclusively on, the student's dissertation research and major area of specialization.

- PSYC 9000 - Dissertation **Credit Hours: (1-9)**

#### School Psychology:

Students in the School Psychology doctoral program must meet these additional requirements:

#### Additional Courses:

Students must complete PSYC 7416/PSYC 8416, PSYC 7800/PSYC 8800, PSYC 7802/PSYC 8802, PSYC 7803/PSYC 8803, PSYC 7804/PSYC 8804, PSYC 7805/PSYC 8805, PSYC 7806/PSYC 8806, LEAD 6000, EDPR 7151 /EDPR 8151 , SPED 7000/8000, LITL 7542/LITL 8542, and COUN 7750/COUN 8750 or PSYC 7434/PSYC 8434 (Clinical Psychotherapies: Appreciating Our Differences).

- PSYC 7416 - Child Psychopathology **Credit Hours: (3)**
- PSYC 8416 - Child Psychopathology **Credit Hours: (3)**
- PSYC 7800 - Intro School Psychology **Credit Hours: (3)**
- PSYC 8800 - Intro School Psychology **Credit Hours: (3)**

- PSYC 7803 - Psych Ed Assessmnt I Credit Hours: (3)
- PSYC 8803 - Psych Ed Assessmnt I Credit Hours: (3)
  
- PSYC 7804 - Psych Ed Assessmnt II Credit Hours: (3)
- PSYC 8804 - Psych Ed Assessmnt II Credit Hours: (3)
  
- PSYC 7805 - Psych Consultation Credit Hours: (3)
- PSYC 8805 - Psych Consultation Credit Hours: (3)
  
- PSYC 7806 - Sch Psych Interventions Credit Hours: (3)
- PSYC 8806 - Sch Psych Interventions Credit Hours: (3)
  
- SPED 7000 - Intro Excpntional Learnr \*\* Credit Hours: (3)
- SPED 8000
  
- COUN 7750 - Multicultural Counseling Credit Hours: (3)
- COUN 8750 - Multicultural Counseling Credit Hours: (3)
- or
- PSYC 7434 - Clin Psychotherapies Credit Hours: (3)
- PSYC 8434 - Clin Psychotherapies Credit Hours: (3)
  
- LEAD 7100 - Education & Community \*\* Credit Hours: (3)
- LEAD 8100 - Education and Community\*\* Credit Hours:
  
- PSYC 7807 - Academic Interventions Credit Hours: (3)
- PSYC 8807 - Academic Interventions Credit Hours: (3)
  
- SPED 7514 - Intro/Appl Behav Anlys Credit Hours: (3)
- SPED 8514 - Intro/Appl Behav Anlys Credit Hours: (3)

## Professional Focus

A minimum of two courses should be selected (in consultation with the program director and student's major professor) to complete a focus.

## Practica:

Students must complete PSYC 7614/PSYC 8614 (6 hours) and PSYC 8809 (6 hours) while in practicum placements.

- PSYC 7614 - Prac School Psyc Credit Hours: (3)
- PSYC 8614 - Prac School Psyc Credit Hours: (3)
  
- PSYC 8809 - Adv Sch Psych Practicum Credit Hours: (3)

## Internship:

Students must complete PSYC 8999 (6 hours) while engaged in a full-time, one-year internship in an agency approved by the program director. Permission must be secured before making application for internship. To be approved, the School Psychology faculty must judge the student to be academically and clinically ready for the internship. Students must successfully defend the dissertation proposal by the end of the spring semester of the year in which they intend to go on internship.

- PSYC 8999 - Predoctoral Internship **Credit Hours: (0)**

## Social and Behavioral Sciences, (PhD)

### Doctor of Philosophy (PhD) Program

Satish Kedia, PhD

*Professor and Graduate Program Coordinator*

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901.678.1433

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The PhD degree in Social and Behavioral Sciences is the highest academic degree for individuals planning to pursue scholarly careers in this discipline. This program is designed for those who intend to teach and conduct original research utilizing rigorous scientific theories and methods to understand and influence the social and behavioral determinants of population health risk factors and outcomes. Graduates of the program are prepared to conduct innovative, interdisciplinary, and translational research in community settings with an emphasis on vulnerable populations, and to design, implement, administer, and evaluate public health interventions and policies. The program will emphasize urban health and health disparities issues in Tennessee and in the Mid-South region.

### Program Admission

A research-based master's degree in a health-related or social/behavioral field is required for admission. Applicants who possess professional master's degrees (e.g., MPH) will be considered if they have appropriate research experience, such as having completed a thesis during master's training, or being employed in a professional research position. Applicants must show potential for further study by having maintained a GPA of at least a 3.0 average in their master's-level coursework. An acceptable, competitive score on the Graduate Record Examination (GRE) in general examination is required. Applicants already holding a doctoral degree or its professional equivalent may be exempted from the GRE requirement. Other professional school standardized test scores (MCAT, DAT, or LSAT,) may be substituted for the GRE by applicants who are working toward or who have already earned post-baccalaureate degrees in medicine, dentistry, management, or law from a United States accredited academic institution. Applicants whose native language is not English will be required to submit acceptable scores on the Test of English as a Foreign Language (TOEFL IBT) or the International English Language Testing System (IELTS).

Letters of recommendation from three individuals (at least two letters from former professors or instructors but fewer may be acceptable in extenuating circumstances) familiar with the applicant's academic background or experience in public health related issues, specifying in detail the applicant's capabilities for graduate study and for future performance as a public health scholar, are required. Applicants must also submit a personal statement of purpose of approximately 750 to 1000 words indicating his/her present interests and career goals, including how the PhD in Social and Behavioral Sciences will prepare the candidate to achieve these goals.

Materials submitted will be reviewed by the faculty admissions committee. Admissions decisions are made based on the overall quality of the applicant's scholarship and academic ability (GPAs, GRE scores, undergraduate and graduate coursework completed, research conducted, relevant work experience, and recommendations) as well as the applicant's "fit" for the program in terms of academic background, research interests, and career goals. Some applicants may be invited for a face-to-face or telephone interview with representatives of the Admissions Committee.

## Program Prerequisites

All doctoral students are required to fulfill the following pre-requisites (9 credit hours) or document equivalent coursework. These three courses will not count toward the required 54 hours of doctoral study:

- PUBH 8150 - Biostatistical Methods I **Credit Hours: (3)**
- PUBH 8170 - Epidemiology in PUBH I **Credit Hours: (3)**
- PUBH 8160 - Soc/Behav Science Principles **Credit Hours: (3)**

## Program Requirements

### Credit Hours:

A minimum of 54 semester hours of graduate credit beyond the master's degree is required for the PhD in Social and Behavioral Sciences. All work for doctoral credit must be approved by, and must be completed at a level of performance satisfactory to, the graduate faculty of the Division of Social and Behavioral Sciences. Students also may take coursework for degree credit outside the School of Public Health with advisor approval.

### Transfer Credit:

Graduate School regulations must be followed regarding accepting academic credits from another institution. Courses proposed for transfer credit must meet the following two requirements. (a) The University of Memphis Board of Trustees requires a minimum of 750 contact minutes for each semester credit (2250 for a 3-hour course). (b) The Tennessee Conference of Graduate Schools requires a minimum of 3 hours of class work per week for 3 hours of credit. Grades earned at another institution will not be computed in the University cumulative grade point average, nor will they be accepted for transfer, unless they are "B" (3.0) or better. No credit will be transferred unless it meets the approval of the major advisor and program graduate coordinator.

### Enrollment:

Full-time students are expected to carry a minimum of 9 credits per semester, and to devote full time during their enrollment to the pursuit of degree-related activities. Full-time students with graduate assistantships are required to enroll for 9 credits each semester. Part-time students are expected to carry a minimum of 6 credits per semester, unless permission is granted from the advisor for a reduced course load.

### Research:

All doctoral students are expected to be active in research collaboratively with members of the Division faculty each semester they are enrolled. Students may receive credit for research involvement by enrolling in PUBH 8800 - Guided Research in PUBH.

### Comprehensive Examination:

Upon completion of required coursework and prior to enrolling in dissertation hours (PUBH 9000), the student must successfully complete a written and oral comprehensive examination. The examination will assess mastery of areas covered in the student's program. The content of the examination for each student will consist of core competencies in public health. The student will be given the following options for the written component of the comprehensive exam: 1. systematic review paper, suitable for submission to a journal; 2. empirical manuscript, appropriate for submission to a journal; and 3. submission of a grant with student as primary investigator in the form of a NIH F31 or a NIH R36 application. Other grant mechanisms may be approved at the discretion of the student's Comprehensive Exam committee. During the oral component of the Comprehensive Exam, mastery of the subject area will be further assessed through a question/answer session with the committee. The questions will consist of

both materials covered in the written component of the exam and general knowledge in the field of public health, including methods, theory, and subject matter pertaining to the student's research area. The student's advisory committee will be responsible for organizing and evaluating the comprehensive examination.

### Dissertation:

To fulfill the requirements for the PhD in Social and Behavioral Sciences, the student must write and defend a dissertation. The dissertation must adhere to the format outlined by the Graduate School. The dissertation topic will be determined by the student in consultation with the advisor with input from the advisory committee.

### Residency Requirements:

The last thirty semester hours of credit for the doctoral degree must be earned at the University of Memphis. Only the number of dissertation hours accepted by the program toward the degree (9) will be accepted as part of the last 30 hours.

### Curriculum Requirements:

The SBS doctoral program is a 54 semester hour degree program, with 45 hours of graduate coursework beyond the master's degree, and 9 hours of PUBH 9000 for dissertation. Students are required to take 12 credit hours of SBS core courses, 3 credit hours of doctoral seminar, 12 credit hours of research methods courses, 6 credit hours of biostatistics, 12 credit hours of elective courses, and 9 credit hours of dissertation.

#### Social and Behavioral Sciences Core (12 credit hours)

- PUBH 8130 - Social Determinants of Health **Credit Hours: (3)**
- PUBH 8132 - Health Program Evaluation **Credit Hours: (3)**
- PUBH 8340 - Behavioral Intervention Develop **Credit Hours: (3)**
- PUBH 8161 - Health Behavior Theories **Credit Hours: (3)**

#### Doctoral Seminar Core (3 credit hours)

- PUBH 8901 - Doctoral Professional Dev Sem **Credit Hours: (3)**

#### Research Methods Core (12 credit hours)

##### Quantitative Methods Course (3 credit hours) – Select one

- PUBH 8604 - Res Methods in Soc/Behav Sci **Credit Hours: (3)**
- PSYC 8301 - Research Design & Meth **Credit Hours: (3)**

##### Quantitative Elective Courses (6 credit hours) – Select two

- PUBH 8141 - Epidemiologic Survey Method **Credit Hours: (3)**
- PUBH 8172 - Epidemiology PUBH II **Credit Hours: (3)**
- PUBH 8174 - Epidemiology PUBH III **Credit Hours: (3)**
- PUBH 8450 - Randomized Clinical Trials I **Credit Hours: 3**

Qualitative Courses (3 credit hours) – Select one

- PUBH 8347 - Qualitative Mtds Hlth Research Credit Hours: (3)

Biostatistics Core (6 credit hours)

Biostatistics II (3 credit hours)

- PUBH 8152 - Biostatistical Methods II Credit Hours: (3)

Select one additional course:

- PSYC 8302 - Adv Statistics Psych I Credit Hours: (3)
- PUBH 8104 - Large Data Sets/PUBH Research Credit Hours: (3)
- PSYC 8304 - Meas Th & Psychomet Credit Hours: (3)
- PUBH 8305 - Quant Meth Review Rsch Credit Hours: (3)
- PUBH 8306 - Linear Struct Modeling Credit Hours: (3)
- PUBH 8308 - Appl Multivariate Stat Credit Hours: (3)
- PUBH 8310 - Mixed Model Regression Analys Credit Hours: (3)
- PUBH 8311 - Appl Categorical Data Analys \*\* Credit Hours: (3)

Elective Courses (12 Credit hours)

Public Health Elective Courses (6 credit hours)

- PUBH 8800 - Guided Research in PUBH Credit Hours: (1-6) \*
- PUBH 8104 - Large Data Sets/PUBH Research Credit Hours: (3)
- PUBH 8140 - Epidemiology of Chronic Diseases Credit Hours: (3)
- PUBH 8333 - Addictive Behaviors Credit Hours: (3)
- PUBH 8335 - Struct/Environ Iss/Urban Comm Credit Hours: (3)
- PUBH 8336 - Women's Health Credit Hours: (3)
- PUBH 8337 - Public Health Nutrition Credit Hours: (3)
- PUBH 8338 - Critical Issues in Global Hlth Credit Hours: (3)
- PUBH 8341 - Physical Activity/Public Hlth Credit Hours: (3)
- PUBH 8342 - Epidemiology Min/Ethnic Pop Credit Hours: (3)
- PUBH 8343 - Tobacco Use: Cause, Conseq, Ctrl Credit Hours: (3)
- PUBH 8345 - Health Literacy Credit Hours: (3)
- PUBH 8346 - Public Mental Health Credit Hours: (3)
- PUBH 8400 - Special Problems Credit Hours: (3)
- PUBH 8447 - Public Health Genomics Credit Hours: (3)

Note:

\* Up to 3 credit hours of PUBH 8800 may be applied toward the Electives requirement.

### Other Elective Courses (6 credit hours)

- EDPR 8109 - Infant Development and Education **Credit Hours: 3**
- EDPR 8165 - Social Devlpmnt/Child **Credit Hours: (3)**
- ESCI 8613 - GIS and Human Health **Credit Hours: (3)**
- PSYC 8207 - Developmental Psyc **Credit Hours: (3)**
- PSYC 8217 - Social Psychology **Credit Hours: (3)**
- PSYC 8416 - Child Psychopathology **Credit Hours: (3)**
- PSYC 8506 - Sem Clinical Psyc **Credit Hours: (3)**
- SOCI 8851 - Medical Sociology **Credit Hours: (3)**

### Dissertation (9 credit hours at the University of Memphis)

PUBH 9000 - Dissertation

### Questions about the SBS PhD Program curriculum and degree requirements:

Satish Kedia, PhD, Professor and Coordinator  
 Social and Behavioral Sciences Doctoral Program  
 901.678.1433  
 skkedia@memphis.edu

## Urban Affairs, (PhD)

**Program objectives** are (1) skill development in research, program evaluation, and policy design to address a myriad of socio-economic challenges in communities in the United States; (2) advanced knowledge of urban theory and the ability to apply of critical skills in using major theories, methods, and approaches in urban affairs research; (3) ability to independently conceptualize, design, and implement research on significant urban problems to strengthen communities and present these findings to academic and community audiences (4) prepare students to work with community partners to create actionable and high-quality research to assist in their endeavors (5) show competence in advanced quantitative and qualitative techniques

## Program Admission

The School of Urban Affairs and Public Policy (SUAPP) admits students for the fall semester of each academic year. Information and application forms can be found on the department website. Applications received after April 1st cannot be guaranteed consideration for an assistantship for the upcoming academic year.

1. Fulfillment of university requirements for admission to the Graduate School.
2. Applicants must hold the equivalent of the M.A. degree in a related social science field before applying to the program. The Urban Affairs Ph.D. curriculum requires students who enter with a master's degree to earn a minimum of 48 credit hours beyond the master's degree. Students who are in the process of completing a master's degree can apply to the program but will be required to finish their master's before beginning the doctoral program sequence.
  - To meet university requirements for earning a Ph.D., all students will need to have at least 72 credit hours of post-baccalaureate course work (i.e., M.A., plus 48 credits hours in the Ph.D. program).
3. Students must provide transcripts of all post-secondary institutions attended.
  - A minimum GPA of 3.00 (on a scale of 4.00) will be expected on post-baccalaureate (M.A. and Ph.D.) work.
4. A statement of purpose (1000 words or less) that discusses:
  - The student's research interests and motivation for pursuing a Ph.D. in Urban Affairs at the University of Memphis.

- What research questions they would like to explore while a doctoral student at the U of M.
  - How the student's academic and professional experience has prepared them to complete a doctoral program.
  - The field areas the student intends to emphasize during their doctoral studies and how they relate to research interests and future career aspirations.
5. A current resume or CV
  6. Provide contact information for at least three references who will be asked to provide letters of recommendation. Applicants can provide up to five references if they choose. (These letters are to be sent directly from the referee to SUAPP via the online application portal).
  7. Submit one policy-oriented writing sample. Applicants can submit up to three. Examples include journal articles (published or under review), master's theses, or other professional writings that demonstrate research and analytical capability.

## Retention Requirements

A student will be retained continuously in the program until completion of the degree providing the following conditions are met:

1. All students will be required to maintain a GPA of at least 3.0. Should the student's GPA fall below that mark, a probationary period of one semester will be allowed to correct the deficiency. At the discretion of the director and the director of graduate studies, this period may be extended one additional semester.
2. Students will be expected to demonstrate satisfactory progress in fulfilling the graduation requirements outlined below.
3. Successful annual review of student progress must be submitted by all students in the Spring semester of each year.

## Graduation Requirements

### General Requirements

1. A minimum of 48 hours of graduate credit beyond the master's degree is required. No more than 6 hours of 6000-level course may be applied to the Urban Affairs Ph.D. degree.
2. Graduate credits earned prior to admission to the Urban Affairs Ph.D. program will not automatically transfer. Students can complete a petition process to have a maximum of 12 such credits applied to the Ph.D. in Urban Affairs degree. Only courses that relate to the purpose and curriculum of the Urban Affairs Ph.D. program will be considered. Credit can only be granted for courses taken with the time limitations set in the Graduate Catalog (10 years).
  - Evaluation of transfer credits is subject to all other University regulations described in the Graduate Catalog.
  - Transfer credits can only be counted towards a student's focus area courses or advanced method requirements. Substitutions will not be allowed for core or dissertation credits.
  - The petition for transfer credits must be completed *after* admission to the Urban Affairs Ph.D. program and *before* the end of the second semester of enrollment.
3. CORE COURSES: All doctoral students must complete the four core courses (12 credits). The core curriculum consists of UAPP 8010, UAPP 8011, UAPP 8012, and UAPP 8013.
4. METHODS SEQUENCE COURSES: All students must complete two Advanced Methods or Analytic Specialty courses (6 credits). Students must demonstrate competence in research methods and analytical techniques by passing these methods courses with a 3.0 or above. Courses should be selected in consultation with the program director or advisor.
5. FOCUS AREA COURSES: All students must complete six Focus Area courses taken from fields within the School of Urban Affairs and Public Policy (18 credits). Up to 6 hours can come from outside departments if a transfer is requested during a student's first year. 6 or more credit hours must come from a discipline outside that of the student's master's degree field to ensure interdisciplinarity.
6. DISSERTATION CREDITS: No more than 12 credit hours of dissertation (UAPP 9000) will count towards satisfying the total number of graduate hours required for the Ph.D. Students may, however, accrue more dissertation credits if needed, but only 12 credit hours will apply to the degree.



## Residency Requirements

Students enrolled in the doctoral program must also meet the university residency requirements as defined in the Minimum Graduate Degree Requirements section of this catalog.

## Comprehensive Examination Requirements

1. Students must pass a comprehensive exam prior to enrolling in dissertation credit hours. The exam should be taken when a student in good standing has completed all required coursework (core, focus area courses, and methodological courses) for the degree or is enrolled in their last semester of coursework.
2. Students must pass a Comprehensive Exam before being considered "late-stage" doctoral students and proceeding to the Dissertation Proposal and Dissertation phase.
3. Students will form a Comprehensive Exam Committee consisting of three to five faculty members. The committee should be formed *after* the student has completed at least 18 credit hours and *no later* than when a student has completed 27 hours of coursework.
4. More information on the Comprehensive Exam Committee and Exam Procedures is in the program's graduate student handbook.

## Analytical and Methods Requirements

- Methods courses should be chosen in consultation with the student's advisor or the program director. These methodological courses should provide statistical training beyond ordinary least squares regression (quantitative) or cover qualitative methodologies including, but not limited to ethnographic field research, content analysis, mixed methods, archival research, and/or case study research.
- NOTE: Courses that qualify as "advanced" methods might require a prerequisite, which would not count toward the Ph.D. Students are encouraged to take SUAP 7100/UAPP8100 Public Policy Statistics to prepare for courses that cover statistical methods beyond ordinary least squares regression. A list of suggested methods courses can be found on the program website.

## Dissertation Requirements

1. Dissertation Committee— After successfully passing Comprehensive Exams, the student must select a dissertation committee of at least four faculty members. This committee may have the same composition as the Comprehensive Exam Committee. The chair of the Dissertation Committee must hold full graduate faculty status and only one external graduate faculty member may serve as a voting member of a dissertation committee. Students should submit a completed **Dissertation Committee Appointment Form** to the Graduate School once members have been selected.
2. Dissertation Proposal Defense—The student will submit a proposal for the dissertation to the committee and defend the proposal before the committee. Once the dissertation proposal is successfully defended, the student can proceed with data collection and writing. Students should submit a completed **Dissertation Proposal Defense Form** and **Doctoral Degree Candidacy** form to the Graduate School upon successfully defending the dissertation proposal.
  - If the research proposal includes any research activity including the use of human subjects, approval must be obtained from the university's Institutional Review Board (IRB) before the research begins.
3. Dissertation Defense—The Urban Affairs Ph.D. requires the completion of at least 12 hours of dissertation credit and doctoral candidates must register for at least one hour of dissertation credit each academic semester (fall and spring) until the dissertation is completed.
  - The dissertation committee will schedule a defense of the completed dissertation in coordination with the chair and the coordinator of graduate studies. Notice will be given, copies of the dissertation made available, and public oral defense of the dissertation will be held. The candidate must complete the Dissertation Defense Announcement form three weeks prior to the date of the defense. Upon approval of the dissertation committee and faculty, the dissertation will be submitted to the Graduate School and the degree awarded.

- Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before beginning to write.

## Time Limit

All requirements for the degree must be completed in 12 calendar years.

## Academic Program Requirements

This curriculum requires 48 hours for student entering with a Master's Degree. Those entering without a Master's degree would be required to earn a Master's degree in one of the host disciplines on the way to the PhD. To meet University requirements, all students would need to have at least 72 hours of postbaccalaureate course work.

### Core Required Courses

- UAPP 8010 - Exploration of Urban Research Theory **Credit Hours: (3)**
- UAPP 8011 - Scope/Methods in Urban Affairs Research **Credit Hours: (3)**
- UAPP 8012 - Collaborative Urban Problem Solving I **Credit Hours: (3)**
- UAPP 8013 - Collaborative Urban Problem Solving II **Credit Hours: (3)**

### Advanced Quantitative and/or Qualitative Methods Courses

All students must take 6 hours in Quantitative or Qualitative Methods in advisement with the Program Director or Advisor. A selection of courses that meet this requirement can be found in the program's graduate student handbook.

### Focus Area Courses:

Choose from existing courses with direction of advisor

Can include Directed Research courses

6 (or more) of these credits should come from outside the discipline of the masters (to ensure interdisciplinarity)

### Dissertation: 12 hours

- UAPP 9000 Dissertation

## Preferred Sequence of Pre-Dissertation Coursework for Full-Time Students:

### First Year

#### Fall

- Exploration of Urban Research Theories (3)
- Focus Area Course (3)
- Focus Area Course (3)

#### Spring

- Scope / Methods in Urban Affairs Research (3)
- Focus Area Course (3)
- Advanced Quant/Qual Methods Course (3)

### Second Year

#### Fall

- Collaborative Urban Problem Solving I (3)

- Focus Area Course (3)
- Advanced Quant/Qual Methods Course (3)

### Spring

- Collaborative Urban Problem Solving II (3)
- Focus Area Course (3)
- Focus Area Course (3)

## Education Specialist

### School Psychology, (EdS)

#### MA and EdS Degree

This program is offered collaboratively with the College of Education and coursework from both areas is required. Students entering the program must complete both the MA and the EdS degrees, including an internship of one school year, in order to obtain an endorsement for licensure. The EdS degree is an advanced sequence in the specialty and is to be pursued only by persons who have completed the MA degree or comparable degree with a concentration in school psychology, or who already hold school psychology credentials. The program is accredited by the Council for the Accreditation of Educator Preparation (CAEP), and holds full approval from the National Association of School Psychologists (NASP)/CAEP. It is also formally approved by the Tennessee State Department of Education and leads to that agency's license in school psychology.

The overall goal of the MA/EdS program is that students will successfully complete the content domain-related requirements of the program, obtain credentialing for school-based practice from the Tennessee State Board of Education or comparable authority in other states, and become Nationally Certified School Psychologists (NCSP).

Program objectives are: (1) understanding of the nature of educational settings and ability to work cooperatively and effectively with parents, school personnel, and other professionals; (2) broad expertise in assessment and intervention at the individual, group, and system level; and (3) development of research and evaluation skills, including data analysis and oral and written communication of research.

#### Program Admission and Prerequisites

Enrollment in the program is limited. All application information must have been received by June 15 for an applicant to be considered for admission to the MA and EdS program in School Psychology. Applications will be reviewed as they are completed and applicants are encouraged to complete the application well in advance of the deadline. The following items are required for consideration for admission:

1. A completed application form accessed at: Graduate Admissions.
2. An official transcript of *all* undergraduate and graduate coursework must be sent..
3. GRE scores are not required and should not be submitted..
4. Letters of recommendation from at least three persons (professional educators, psychologists, and/or employers) familiar with the applicant's academic background, aptitude for graduate work in school psychology, and interest in working with school-age children in school settings.
5. Undergraduate preparation in Psychology and/or Education. It is strongly recommended that applicants have at least 18 undergraduate hours in Psychology and/or Education, with preparation in the psychology of learning, psychological appraisal/measurement, human growth and development, and foundations of education.
6. The program is pursued on a full-time basis and students enroll for 12 hours each semester. Enrolling for fewer hours is done with the permission of the program director.
7. Further information about applying may be found at: <https://www.memphis.edu/psychology/graduate/apply.php>.

## Program Requirements—EdS Degree (minimum 30 hours)

### Psychology courses (9 hours):

- PSYC 7301 - Research Design & Meth **Credit Hours: (3)**  
or
- Research elective
- PSYC 7614 - Prac School Psyc **Credit Hours: (3)**
- PSYC 8807 - Academic Interventions **Credit Hours: (3)**

### Education courses (15 hours):

- LEAD 6000 - Educ/Schl/Am Society **Credit Hours: (3)**
- EDPR 7511 - Intro Ed and Psych Measurement \*\* **Credit Hours: 3**
- EDPR 7541 - Stat Meth App Ed I \*\* **Credit Hours: (3)**
- SPED 7000 - Intro Excpntional Learnr \*\* **Credit Hours: (3)**  
and two electives from COUN, EDPR, SPED.

### School Psychology Internship

School Psychology Internship (PSYC 8812, 6-12 hours) is taken at or near the completion of other work.

- PSYC 8812 - Intern: School Psyc **Credit Hours: (3-6)**

### Written examination

### Combination Degree

### MBA/JD

The MBA/JD is a 36-credit hour dual degree designed for students who are currently enrolled in the JD program at the University of Memphis, Cecil C. Humphreys School of Law and are interested in modern law and management. This joint program offers the student the ability to complete both the JD and MBA degrees in less time than it takes to complete them separately.

#### Admission

An applicant must submit separate applications and be independently accepted to both the JD and MBA programs. A student is encouraged to apply to both programs at the same time. A law student must begin the MBA program before beginning the third year of law school course work. An MBA student must begin law school before completing one half of the course work in the MBA program.

#### Program Sequence

Students in the coordinated MBA/JD program may schedule their course work in the joint program to suit their educational objectives, subject to the restrictions listed below:

- A student may take only law courses while completing the first year law curriculum.
- A law student must begin the MBA program before beginning the third year of law school course work.
- An MBA student must begin law school before completing one half of the course work in the MBA program.

### Important note about costs

The University of Memphis charges a student in a joint degree program the higher tuition for all credits earned in either degree. Since law school tuition is higher than graduate business school tuition, students in the joint degree are charged law school tuition rates for course credit in both law school and business school, even if a student only takes business school courses in a given semester.

For more information, please visit the program websites:

- School of Law: <https://www.memphis.edu/law/programs/jd-mba.php>
- Professional MBA: [https://www.memphis.edu/professionalmba/students/mba\\_dual.php](https://www.memphis.edu/professionalmba/students/mba_dual.php)

### MBA Preparatory Knowledge

There are no prerequisites for the core MBA curriculum. However, students entering the MBA programs are expected to be fluent in the language of business, with a working understanding of key concepts in economics, finance, and accounting. In addition, students are expected to have a working proficiency in statistics.

## MBA Degree Requirements

Each candidate for an MBA degree must complete 30 hours of Core courses, plus 6 hours of approved Elective courses, for a total of 36 credit hours.

### MBA Core Courses (30 hours):

- ACCT 7080 - Financial/Managerial Acct Mgrs \*\* Credit Hours: (3)
- BA 7501 - Leadership & Negotiation Credit Hours: 3
- BA 7503 - Advanced Business Analytics Credit Hours: 3
- ECON 7100 - Econ for Global Executive \*\* Credit Hours: (3)
- FIR 7155 - Global Financial Mgmt \*\* Credit Hours: (3)
- MGMT 7160 - Global Strategic Mgmt \*\* Credit Hours: (3)
- MIS 7650 - Info Syst Global Enterprise \*\* Credit Hours: (3)
- MKTG 7140 - Global Strategic Marketing \*\* Credit Hours: (3)
- SCMS 7110 - Intro to Business Analytics \*\* Credit Hours: (3)
- SCMS 7313 - Supply Chain Operations Mgmt \*\* Credit Hours: (3)

## MBA/JD Course Substitution

The School of Law will award credit toward the JD degree for 9 hours of approved MBA Core Knowledge and Skills course work. These 9 credit hours count for a portion of the thirty-five JD elective hours, under the following conditions:

- MBA courses must be taken on-campus (i.e. online classes will not be counted).
- The student must earn a grade of B or better in each MBA course.
- Grades in MBA courses transfer to the School of Law on a Pass/No Grade basis.
- Grades in MBA courses are not used to determine academic standing or class rank in the School of Law.

The Fogelman College of Business and Economics will award credit toward the MBA degree for 9 credit hours of approved courses offered by the School of Law. These 9 credit hours count for the 6 hours of elective courses and 3 hours of MBA Core courses, under the following conditions:

- The student must earn a C+ or better in the law classes used towards the MBA.
- The law classes will not be counted to compute the MBA grade point average.

- At most two C's may count towards the MBA degree.

The decision on which required hours are substituted is at the discretion of the MBA program director.

For up-to-date lists of MBA courses that count toward the JD degree and JD courses that count towards the MBA degree, please visit the following website:

<https://www.memphis.edu/law/programs/jd-mba.php>

## MHA/MBA

The University of Memphis School of Public Health and the Fogelman College of Business & Economics offer a combination degree targeted at students with an interest in health administration and business. This combination degree offers the student the ability to complete both the MHA and MBA degrees in less time than it takes to complete them separately.

### Admission Requirements

Admission decisions to the MHA and MBA programs are separate. Students will apply and be accepted into each program separately.

For information to apply to each program, please visit:

- **MHA:** <https://www.memphis.edu/sph/apply/mha.php>
- **MBA:** <https://www.memphis.edu/professionalmba/admissions/index.php#apply>

### Program Requirements

#### MHA Program

A student is required to complete a minimum of fifty-three (53) semester hours. Fifty (50) hours are taken in the core curriculum and three (3) hours of electives. The comprehensive examination (HADM 7210) must be successfully completed during the semester in which the student expects to graduate.

#### MBA Program

A student is required to complete thirty (30) hours of core curriculum, plus six (6) hours of elective courses, for a total of thirty six (36) credit hours.

### Combination Degree Requirements

Students can earn a combination degree with 71-credit hours over as few as 24 months, if they wish.

For Commission on Accreditation of Healthcare Management Education (CAHME) accreditation, all required MHA classes are must be delivered in a traditional, in-class format. MBA courses may be taken online or in-class.

### Required MHA Core Courses (41 hours):

- HADM 7100 - Day 1 Sem I: Leadership Skills **Credit Hours: (1)**
- HADM 7105 - Hlth Policy & Org Hlth Svs \*\* **Credit Hours: (3)**
- HADM 7116 - Adm Health Serv Orgs \*\* **Credit Hours: (3)**
- HADM 7605 - Human Resources Admin \*\* **Credit Hours: (3)**
- HADM 7101 - Day 1 Sem II: LeadershipSkills **Credit Hours: (1)**
- HADM 7102 - Health Care Law \*\* **Credit Hours: (3)**
- HADM 7204 - Healthcare Qual & Outcms Mgmt \*\* **Credit Hours: (3)**
- HADM 7208 - Health Care Finance II \*\* **Credit Hours: (3)**
- HADM 7190 - Internship Hlth Admn I **Credit Hours: (1-6)**
- PUBH 7710 - HealthCare Economics **Credit Hours: (3)**

- HADM 7103 - Health Planning \*\* Credit Hours: (3)
- HADM 7140 - Population Health Management \*\* Credit Hours: (3)
- HADM 7109 - Health Information Systems \*\* Credit Hours: (3)
- PUBH 7502 - Hlth Policy, Theory & Methods Credit Hours: (3)
- HADM 7210 - Comp Expr/Hlth Care Mgmt Credit Hours: (3)

### Required MBA Core Courses (27 hours):

- ACCT 7080 - Financial/Managerial Acct Mgrs \*\* Credit Hours: (3)
- ECON 7100 - Econ for Global Executive \*\* Credit Hours: (3)
- FIR 7155 - Global Financial Mgmt \*\* Credit Hours: (3)
- MIS 7650 - Info Syst Global Enterprise \*\* Credit Hours: (3)
- MKTG 7140 - Global Strategic Marketing \*\* Credit Hours: (3)
- SCMS 7313 - Supply Chain Operations Mgmt \*\* Credit Hours: (3)
- SCMS 7110 - Intro to Business Analytics \*\* Credit Hours: (3)
- BA 7503 - Advanced Business Analytics Credit Hours: 3
- MGMT 7160 - Global Strategic Mgmt \*\* Credit Hours: (3)

### MHA/MBA Course Substitutions:

One (1) of the two courses below counts towards the MBA core and the MHA core (3 hours):

- BA 7501 - Leadership & Negotiation Credit Hours: 3
- HADM 7110 - Leadershp/Org Chg in Hlth Care \*\* Credit Hours: (3)

The following two (2) MBA courses count towards the MHA core (6 hours):

- ACCT 7080 - Financial/Managerial Acct Mgrs \*\* Credit Hours: (3)
- BA 7503 - Advanced Business Analytics Credit Hours: 3

One (1) of the following MBA courses counts as the MHA elective (3 hours):

- FIR 7155 - Global Financial Mgmt \*\* Credit Hours: (3)
- MIS 7650 - Info Syst Global Enterprise \*\* Credit Hours: (3)
- MKTG 7140 - Global Strategic Marketing \*\* Credit Hours: (3)

Two (2) of the following MHA courses count as MBA electives (6 hours):

- HADM 7105 - Hlth Policy & Org Hlth Svs \*\* Credit Hours: (3)
- HADM 7102 - Health Care Law \*\* Credit Hours: (3)
- HADM 7204 - Healthcare Qual & Outcms Mgmt \*\* Credit Hours: (3)

## Political Science, (MA/JD)

### Dual MA-JD Program

### Program Admission

Admission to the dual program will require separate admission to each program. However, for applications to the joint program, the Political Science Department will accept LSAT scores in lieu of the GRE. Students are admitted into each program separately; completion of one degree is not contingent upon completion of both.

## Program Requirements

### Dual Credit

Students may earn up to a maximum of sixteen hours of dual credit for law courses taken at the law school. The following courses will qualify for both the JD and MA in Political Science:

#### Law Courses Required at Law School:

Constitutional Law 4 hours, Criminal Law 3 hours, Criminal Procedure I 3 hours

#### Law School Electives:

Administrative Law 3 hours, Criminal Procedure II 2 hours, Federal Courts A 2 hours, Federal Courts B 2 hours, Civil Rights 3 hours, Constitutional Law Seminar 2 hours, Tennessee Constitutional Law 2 hours, Jurisprudence 2 hours, International Law 3 hours, Comparative Law 3 hours, Immigration Law 3 hours, Environmental Law 3 hours

### Other Requirements

1. For students in the dual program, their first year of law school must include only classes that are part of the JD program.
2. With the above exceptions, all the normal requirements for admission and graduation for a JD and for an MA in Political Science apply.
3. See the Law School's Academic Regulations, pp. 14-16, for current JD requirements.

## Public Health, (MPH/JD)

A program of study leading to both a Master of Public Health (MPH) from the School of Public Health and a Juris Doctorate (JD) from the Cecil C. Humphreys School of Law is offered. Students must meet the following requirements:

### Admission Criteria and Process

Candidates for the program must meet the entrance requirements and procedures for admission to both the Juris Doctor and the Master of Public Health degree programs. Both programs must be informed by the student at the time of application to the second program that he/she intends to pursue the dual JD/MPH program.

### Eligible Grades

Law School courses that are to be credited toward the MPH degree must carry a grade of C or higher but will not be counted in the grade point average for the MPH degree program.

### Program Completion Requirements



A student must satisfy the curriculum requirements for each degree before either degree is awarded.

The MPH, a 42-credit program, will allow 15 credits of appropriate law courses to be credited toward both MPH and JD degrees.

## Award of Degree

A student enrolled in the dual degree program may receive the JD degree or the MPH degree when he or she has satisfied the requirements for either degree.

## Admission

A potential student must make separate application to, and be independently accepted to, both the JD and MPH programs. However, for applicants to the dual program, the School of Public Health will accept LSAT scores in lieu of the GRE. Application to both programs at the same time is encouraged. This dual program is designed for students who wish to complete both degrees simultaneously. Students are admitted into each program separately; completion of one degree is not contingent upon completion of both.

## School Psychology, (MA/EdS)

### MA and EdS Degree

This program is offered collaboratively with the College of Education and coursework from both areas is required. Students entering the program must complete both the MA and the EdS degrees, including an internship of one school year, in order to obtain an endorsement for licensure. The EdS degree is an advanced sequence in the specialty and is to be pursued only by persons who have completed the MA degree or comparable degree with a concentration in school psychology, or who already hold school psychology credentials. The program is accredited by the Council for the Accreditation of Educator Preparation (CAEP), and holds full approval from the National Association of School Psychologists (NASP)/CAEP. It is also formally approved by the Tennessee State Department of Education and leads to that agency's license in school psychology.

The overall goal of the MA/EdS program is that students will successfully complete the content domain-related requirements of the program, obtain credentialing for school-based practice from the Tennessee State Board of Education or comparable authority in other states, and become Nationally Certified School Psychologists (NCSP).

Program objectives are: (1) understanding of the nature of educational settings and ability to work cooperatively and effectively with parents, school personnel, and other professionals; (2) broad expertise in assessment and intervention at the individual, group, and system level; and (3) development of research and evaluation skills, including data analysis and oral and written communication of research.

### Program Admission and Prerequisites

Enrollment in the program is limited. All application information must have been received by June 15 for an applicant to be considered for admission to the MA and EdS program in School Psychology. Applications will be reviewed as they are completed and applicants are encouraged to complete the application well in advance of the deadline. The following items are required for consideration for admission:

1. A completed application form accessed at: Graduate Admissions.
2. An official transcript of *all* undergraduate and graduate coursework must be sent..
3. GRE scores are not required and should not be submitted..

4. Letters of recommendation from at least three persons (professional educators, psychologists, and/or employers) familiar with the applicant's academic background, aptitude for graduate work in school psychology, and interest in working with school-age children in school settings.
5. Undergraduate preparation in Psychology and/or Education. It is strongly recommended that applicants have at least 18 undergraduate hours in Psychology and/or Education, with preparation in the psychology of learning, psychological appraisal/measurement, human growth and development, and foundations of education.
6. The program is pursued on a full-time basis and students enroll for 12 hours each semester. Enrolling for fewer hours is done with the permission of the program director.
7. Further information about applying may be found at: <https://www.memphis.edu/psychology/graduate/apply.php>.

## Program Requirements—MA Degree (30 hours)

### Psychology courses (21 hours):

- PSYC 7800 - Intro School Psychology **Credit Hours: (3)**
- PSYC 7207 - Developmental Psyc **Credit Hours: (3)**
- PSYC 7803 - Psych Ed Assessmnt I **Credit Hours: (3)**
- PSYC 7804 - Psych Ed Assessmnt II **Credit Hours: (3)**
- PSYC 7805 - Psych Consultation **Credit Hours: (3)**
- PSYC 7806 - Sch Psych Interventions **Credit Hours: (3)**
- PSYC 7807 - Academic Interventions **Credit Hours: (3)**

### Education courses (15 hours):

- EDPR 7511 - Intro Ed and Psych Measurement \*\* **Credit Hours: 3**
- LEAD 6000 - Educ/Schl/Am Society **Credit Hours: (3)**
- SPED 7000 - Intro Excpntional Learnr \*\* **Credit Hours: (3)** (or SPED elective if a course focusing on characteristics of exceptional children course was taken at the undergraduate level)
- SPED 7514 - Intro/Appl Behav Anlys **Credit Hours: (3)**
- SPED 7518 - Evidence-Based Prac in ABA **Credit Hours: (3)**

### Written and oral examinations

### Participation in service experiences

Participation in service experiences in the Psychological Services Center or other agency placements for training purposes.

## Program Requirements—EdS Degree (minimum 30 hours)

### Psychology courses (9 hours):

- PSYC 7301 - Research Design & Meth **Credit Hours: (3)**
- or
- Research elective
- PSYC 7614 - Prac School Psyc **Credit Hours: (3)**

- PSYC 8807 - Academic Interventions **Credit Hours: (3)**

### Education courses (15 hours):

- LEAD 6000 - Educ/Schl/Am Society **Credit Hours: (3)**
- EDPR 7511 - Intro Ed and Psych Measurement \*\* **Credit Hours: 3**
- EDPR 7541 - Stat Meth App Ed I \*\* **Credit Hours: (3)**
- SPED 7000 - Intro Exceptional Learnr \*\* **Credit Hours: (3)**  
and two electives from COUN, EDPR, SPED.

### School Psychology Internship

School Psychology Internship (PSYC 8812, 6-12 hours) is taken at or near the completion of other work.

- PSYC 8812 - Intern: School Psyc **Credit Hours: (3-6)**

### Written examination

## Social Work, (MSW/MPH)

### Dual MSW-MPH

A program of study leading to both a Master of Social Work (MSW) and a Master of Public Health (MPH) is offered. Students must meet the following requirements.

### Program Admission

Admission to the dual program will require separate admission to each program. Students are admitted to each program separately and must meet ALL admissions criteria for each degree. Completion of one degree is not contingent upon completion of both.

### Program Requirements

Students may earn up to a maximum of twelve hours of dual credit. The following courses will qualify for both the MSW and the MPH.

- PUBH 7132 may be substituted for SWRK 7026.
- PUBH 7985 may be substituted for either SWRK 7053 or SWRK 7054.
- Electives in either of the two programs may be shared.

## Social Work, (MSW/MS)

### Dual MSW-MS

A program of study leading to both a Master of Social Work (MSW) and a Master of Science in Instruction and Curriculum Leadership with a concentration in Special Education/Applied Behavior Analysis (MS) is offered. Students must meet the following requirements.

## Program Admission

Admission to the dual program will require separate admission to each program. Students are admitted to each program separately and must meet ALL admissions criteria for each degree. Completion of one degree is not contingent upon completion of both.

## Program Requirements

Students may earn up to a maximum of twelve hours of dual credit. The following courses will qualify for both the MSW and the MS.

- EDPR 7521 may be substituted for SWRK 7025.
- SPED 7519 may be repeated and may be substituted for SWRK 7053 or SWRK 7054.
- Electives in either of the two programs may be shared.

## Graduate Certificate

### K-12 Educational Leadership Graduate Certificate

#### Graduate Certificate

This certificate program will provide graduate classes to individuals already possessing a master's degree in an education field but are interested in engaging in graduate-level courses and practitioner experiences in order to attain assistant principal/school principal state licensure. This certificate aligns with the State of Tennessee University Partner Path (UPP) alternate route certificate program and is being put in place to better track UPP students, provide them with a graduate certificate in addition to licensure attainment, and provide a program of studies that supports successfully licensure test completion.

#### Admission Requirements

Applicants must have a master's degree in an education related field. Applicants should express a desire to their knowledge of educational leadership/school leadership and have plans to apply for an assistant principle or school principle position in the future via a typed letter of intent. 3.0 masters GPA. Transcripts from previously attended institutions, Resume/CV, three letters of recommendation—one letter must come from a principle or school superintendent the applicant is currently working for (No GRE requirement).

#### Program Requirements

- LDPS 7141 - The Principalship \*\* Credit Hours: (3)
- LEAD 7004 - Instructional Leadership \*\* Credit Hours: (3)
- EDPR 7524 - Research Methods for School Accountability Credit Hours: (3)
- LDPS 7120 - Supervisory Process Credit Hours: (1-6)
- LDPS 7150 - Educational Law \*\* Credit Hours: (3)
- LEAD 7210 - Field Experiences \*\* Credit Hours: (1-9)

## Graduation Requirements

Maintain a GPA of 3.0 while enrolled in the certificate program.

## Retention Requirements

No course grades lower than a "B". Course grades of a "C" or below must be repeated.

## Admission Requirements

1. Meet all Graduate School admission requirements
2. Have Undergraduate/Graduate GPA of 3.0
3. Submit a letter of recommendation from local school district
4. Hold a Professional Teacher License

## African American Literature Graduate Certificate

### Certificate Program

The African American Literature certificate provides training to students interested in teaching African American Literature. The goal of the training is to 1) provide students with the preparation they need to teach African American Literature, and 2) give official recognition of preparation to help students qualify for jobs both within and outside the United States.

### Admission Requirements

1. Students eligible to take courses as non-degree seeking students at the University of Memphis can complete the certificate requirements.
2. Applicants should send a letter of intent and two letters of recommendation to the Department of English Graduate Office. Applicants must also apply and send official transcripts to the University of Memphis Graduate School.
3. An overall minimum grade point average of 2.75 in English or a related area is recommended at the undergraduate level.
4. Since up to 15 credit hours from the certificate program may count toward the MA, MFA, or PhD degrees, it is expected that many already-admitted students will earn the certificate on their way to the MA, MFA, or PhD degree. Such students wishing to earn the Certificate must apply to the Certificate Program through the Graduate School.

### Program Requirements

#### Fifteen (15) Semester Credit Hours

The certificate program requires completion of fifteen (15) semester credit hours, including:

#### Twelve (12) Credit Hours

Twelve (12) credit hours must be met by satisfactory completion of any four (4) of the following core courses:

- ENGL 7326 - African American Literature of Memphis and the Mid-South **Credit Hours: (3)**

- ENGL 7327 - Studies in Form and Genre: African American Literature **Credit Hours: (3)**
- ENGL 7328 - Studies in Major Authors: African American Literature **Credit Hours: (3)**
- ENGL 7329 - African American Literature, Beginnings to 1850 **Credit Hours: (3)**
- ENGL 7330 - Afr-Amer Lit 1850-1900 \*\* **Credit Hours: (3)**
- ENGL 7332 - Literature of the African Diaspora **Credit Hours: (3)**
- ENGL 7335 - African American Literature, 1989-Present **Credit Hours: (3)**
- ENGL 7336 - African American Literary Theory **Credit Hours: (3)**
- ENGL 7337 - African-American Literature, 1930-1988 **Credit Hours: (3)**
- ENGL 7338 - Amiri Baraka and the Black Arts Movement **Credit Hours: (3)**
- ENGL 7468 - Literature of the Harlem Renaissance \*\* **Credit Hours: (3)**
- ENGL 7469 - African American Women Writers \*\* **Credit Hours: (3)**

### Three (3) Elective Hours

Three (3) elective hours may be selected from one of the following courses, provided it has an African American Literature component:

- ENGL 7281 - Studies in Early American Literature **Credit Hours: (3)**
- ENGL 7294 - Studies in 19th-Century American Literature **Credit Hours: (3)**
- ENGL 7391 - Modern American Novel **Credit Hours: (3)**
- ENGL 7392 - American Poetry **Credit Hours: (3)**
- ENGL 7393 - American Drama **Credit Hours: (3)**
- ENGL 7464 - Contemporary American Literature **Credit Hours: (3)**

### Retention Requirements

Same as retention policies applicable to Department of English graduate degree programs.

### Graduation Requirements

Following the deadlines in the semester in which they intend to graduate, certificate candidates must file an Apply to Graduate Card with the Graduate School and a Candidacy form with the Graduate Coordinator for English.

## **Analytical Chemistry Graduate Certificate**

### Admission Requirements

Students will have a U.S. equivalent bachelor's degree with a satisfactory record of undergraduate coursework in chemistry or related areas. GRE is not required.

### Program Requirements

- CHEM 6211 - Instrumntl Analysis **Credit Hours: (3)**
- CHEM 6416 - Molecular Spectroscopy **Credit Hours: (3)**
- CHEM 7211 - Adv Analytical Chem I **Credit Hours: (3)**

- CHEM 7212 - Adv Analytical Chem II **Credit Hours: (3)**

## Graduation Requirements

12 credit hours with a cumulative GPA of at least 3.00.

## Retention Requirements

The graduate certificate program will follow the program retention plans outlined in the Chemistry Graduate Handbook.

## Applied Lean Leadership Graduate Certificate

### Graduate Certificate

#### Program Admission

Students must have completed a bachelor's degree with a cumulative grade point average of at least 2.5 and apply for admission to the Graduate School with the classification of "Graduate Certificate." To apply students must submit:

1. Transcripts of undergraduate degree program and any prior graduate study to Graduate Admissions;
2. A letter describing their intent to pursue the certificate and its relevance to their career goals to the Graduate Coordinator for the Department of Engineering Technology;
3. When seeking to waive a course prerequisite, two professional letters of recommendation describing pertinent work experience must be sent to the Graduate Coordinator for the Department of Engineering Technology.

#### Program Requirements

Completion of 12 semester hours distributed as follows:

Required courses: Total 6 credits

- TECH 7105 - Project Plan & Scheduling \*\* **Credit Hours: (3)**
- TECH 7401 - Lean Fundamentals \*\* **Credit Hours: (3) \***

Note:

\*Course prerequisites will be waived for students who have demonstrated relevant work experience

Electives: 6 credit hours chosen from the following:

- TECH 7402 - Adv Quality Control **Credit Hours: (3) \***
- TECH 7404 - Wrld/Clas Manfct Concpt \*\* **Credit Hours: (3) \***
- TECH 7406 - Material Handling/Auto **Credit Hours: (3) \***
- TECH 7408 - Production Processes **Credit Hours: (3)**
- TECH 7414 - Manuf Strat/Syst Design \*\* **Credit Hours: (3) \***

**Note:**

\*Course prerequisites will be waived for students who have demonstrated relevant work experience

Students may enroll in up to two electives from the Fogelman College of Business and Economics. Selection of the two business electives must be approved by the student's academic advisor and the Associate Dean of the Fogelman College.

**Graduation:**

1. Students must file and "Apply to Graduate" with the Graduate School at the beginning of the semester in which they will complete their 12-semester-hour requirement for the certificate.
2. A minimum grade of "B" in each course applicable to the certificate and a minimum overall GPA of 3.0 is required.
3. Students must also submit a Graduate Certificate Program Candidacy Form to the Engineering Technology Graduate Coordinator in order to verify information and collect approvals and signatures required for the Graduate School.

**Arts Entrepreneurship Graduate Certificate****Graduate Certificate**

This graduate certificate in arts entrepreneurship situates the College of Communication and Fine Arts at the intersection of creativity, artistic expression, and business acumen to usher in the next stage of big thinkers, dreamers, and doers in the city of Memphis. The certificate aims to support the development and articulation of startups, incubators, and other forms of entrepreneurship in order to build a creative community.

**Admission Requirements**

1. An undergraduate degree with a major, concentration, or minor in the arts.
2. Applicants will be required to submit an essay describing their arts background and an idea of a potential startup they wish to launch.

**Program Requirements**

- CCFA 7001 - Arts Entrepreneurship I **\*\* Credit Hours: 3**
- CCFA 7002 - Arts Entrepreneurship II **\*\* Credit Hours: 3**
- CCFA 7003 - Arts Entrepreneurship III **Credit Hours: 3**
- CCFA 7004 - Arts Entrepreneurship IV **Credit Hours: 3**

**Graduation Requirements**

Completion of all four required classes with a minimum GPA of 3.0.

**Retention Requirements**

The required courses must be taken in sequence. If a student does not successfully complete one course, the student would not be retained in that cohort, but may reapply for admission in the next academic year.



## Athletic Administration Graduate Certificate

### Graduate Certificate

The 12-credit hour certificate will focus on the administration of athletics across multiple competitive levels (e.g., high school, college, etc.). A combination of existing and new classes will be used. A unique feature of this certificate program is that it will have a flexible option whereby students can select from six (6) classes to complete the degree requirements.

### Admission Requirements

1. Prospective students must use the Graduate School application to apply to the program. The applicant must submit an official transcript for undergraduate and graduate studies. Additionally, as part of the application to the Graduate School, an applicant seeking admission is not required to submit GRE scores. However, official GRE, GMAT, LSAT, or other standardized test scores may be requested by KWS faculty or submitted to support an application.
2. An applicant must also submit the following to the department: 1) two letters of recommendation, 2) an updated resume or curriculum vita, and 3) a 300-500 word statement of goals.
3. An applicant must have graduated with a minimum baccalaureate GPA of 2.5.
4. Completion of an appropriate undergraduate major and a strong background in discipline-specific courses in sport management, hospitality, culinary, casino management, economics, finance, marketing, public relations, communications, commercial recreation, event management, resort management, and/or tourism.
5. Completion of undergraduate work deemed by the concentration committee as prerequisite to graduate courses.
6. Student admissions to the Sport and Hospitality Management (SHM) major are differentially restricted to enable Graduate Faculty to closely mentor their students. To ensure maximum consideration for admission into the major, the SHM admissions committee abides by the Graduate School's established timeline for application (domestic and international). The admission committee may request a personal interview. Multiple criteria will be used when considering applicant admission, including, but not limited to, undergraduate and graduate grade point average, GRE/GMAT/LSAT scores, personal goals statement, relevant employment history, and letters of recommendation.

### Program Requirements

Choose four of the following list of courses:

- SPRT 7041 - Interscholastic Athletic Admin **Credit Hours: 3**  
or
- SPRT 7410 - Athletic Team Management **Credit Hours: (3)**  
or
- SPRT 7420 - Sport Marketing \*\* **Credit Hours: (3)**  
or
- SPRT 7503 - Strat Mgmt Sprt Cmrce Org \*\* **Credit Hours: (3)**  
or
- SPRT 7603 - Admin of Athletics \*\* **Credit Hours: (3)**  
or
- SLC 6410 - College Athletics Compliance **Credit Hours: 3**  
and

### Graduation Requirements

Successful completion of the 12-credit hours.

# Augmentative and Alternative Communication (AAC) Graduate Certificate

## Program Description

The purpose of the "Augmentative and Alternative Communication (AAC)" certificate is to provide training to practicing speech-language pathologists (SLPs) and teachers on supporting the language development of children with significant language disabilities. The certificate requires a firm background in typical language development as well as language disorders and then moves on to applying this knowledge to the specialized area of AAC. Once these prerequisites are complete, the certificate allows for an elective in a related field.

According to the 2016 Schools Survey data from ASHA, 55.1% of practicing SLPs have students who have complex communication needs and require AAC on their caseloads. And yet, according to a 2012 survey by Anderson and colleagues, 85% of SLPs don't feel they have the knowledge of AAC to meet the needs of their caseload. This certificate offers these clinicians the opportunity to enhance their knowledge and experience working with individuals with complex communication needs and apply this information to their daily work demands.

## Admission Requirements

To be eligible for the Graduate Certificate Program in Augmentative and Alternative Communication:

1. Applicants must enroll as a graduate student at the University of Memphis or have a completed Master's degree in Speech Language Pathology or a related field with a GPA of at least 3.00.
2. Applicants who do not speak English as their primary language are required to meet the University's minimum TOEFL score.
3. To apply, students must submit an application form, a current or completed graduate transcript, and a one-page letter of intent to the School of Communication Sciences and Disorders for review. Letters of intent should describe reasons for pursuing the certificate, relevant background and experiences, and/or professional goals or plans.
4. Admission to this certificate program does not imply acceptance into any graduate program at the School of Communication Sciences and Disorders or within the university.

## Program Requirements

Students are required to take the 3 required courses listed below along with one 3-hour elective. If the student has two years of experience working as a speech-language pathologist, AUSP 7006/AUSP 8006 and AUSP 7300/AUSP 8300 can be waived, and these students would be required to complete a total of 9 instead of 12 credits. These credits will include AUSP 7308/AUSP 8308 (required), one elective related to Autism, and any other elective from the list below:

### Required Courses (9 credit hours):

- AUSP 7006 - Lang & Speech Devel **Credit Hours: (3)** /
- AUSP 8006 - Lang & Speech Devel **Credit Hours: (3)**
  
- AUSP 7300 - Lang Dis In Children **Credit Hours: (3)** /
- AUSP 8300 - Lang Dis In Children **Credit Hours: (3)**
  
- AUSP 7308 - Augmentative/Alternatv Comm **Credit Hours: (3)** /
- AUSP 8308 - Augmentative/Alternatv Comm **Credit Hours: (3)**

\*A course substitution may be considered on the basis of alternative graduate-level coursework such as Language Learning Disabilities or Language Disorders in Adults I.

### Electives (3 credit hours):

- AUSP 6205 - Cultural Sensitivity for the Deaf and Hard of Hearing in Healthcare Settings  
Credit Hours: (3)
- AUSP 6300 - Autism: Communic & Socializtn Credit Hours: (3)
- AUSP 7212 - Autism Spect Disord/Rel Disabl Credit Hours: (3)
- AUSP 7302 - Lang Disordrs/Adults I Credit Hours: (3)
- AUSP 7303 - Lang Disordrs/Adults II Credit Hours: (3)
- PSYC 7802 - Child Disability/Family Credit Hours: (3) /
- PSYC 8802 - Child Disability/Family Credit Hours: (3)

### Retention/Graduation Requirements

1. Students must complete all three of the required courses (9 credits) and one elective (3 credits) for a total of 12 credits with a minimum grade of B (GPA = 3.00) in each course.
2. In the semester of graduation, the student must submit an Intent to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to the Director of Graduate Studies by the deadline specified by the Graduate School.

### For additional information contact

Lisa Lucks Mendel, PhD  
Associate Dean of Graduate Studies  
901.678.5800  
lmendel@memphis.edu

### Additional References

American Speech-Language-Hearing Association. (2016). 2016 Schools Survey report: SLP caseload characteristics.

Available from [www.asha.org/research/memberdata/schoolssurvey/](http://www.asha.org/research/memberdata/schoolssurvey/).

Anderson, A. (2012). ATIA Survey Data. Presented at the annual convention of the Assistive Technology Industry Association; January 26 –28; Orlando, FL.

## Autism Studies Graduate Certificate

### Graduate Certificate

The purpose of the Graduate Certificate in Autism Studies is to provide practical educational training to individuals who are presently working within healthcare, adult disability and/or educational settings. This certificate course sequence will provide a) an overview of autism spectrum disorders, b) instruction in making evidence-based treatment decisions, and c) advanced instruction in designing, implementing, and monitoring evidence-based instructional and behavior/classroom management programs.

## Program Requirements

- SPED 7600 - Intro to Aut Spec Dis **Credit Hours: (3)**
- SPED 8600 - Intro to Aut Spec Dis **Credit Hours: (3)**
  
- SPED 7601 - ASD: Class Mgmt and Design **Credit Hours: (3)**
- SPED 8601 - ASD: Class Mgmt and Design **Credit Hours: (3)**
  
- SPED 7602 - ASD: Instruct Methods I **Credit Hours: (3)**
- SPED 8602 - ASD: Instruct Methods I **Credit Hours: (3)**
  
- SPED 7603 - ASD: Instruct Methods II **Credit Hours: (3)**
- SPED 8603 - ASD: Instruct Methods II **Credit Hours: (3)**

## Graduation Requirements

In order to graduate with the certificate, students must:

1. Complete all four required courses with an average grade of B (3.0) or higher, for a total of 12 credit hours.
2. In the semester of graduation, the student must submit the Apply to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to Graduate Analyst in Ball Hall 215 (3798 Walker Ave., Memphis, TN 38152) by the deadline specified by the Graduate School.

## Aviation Human Factors Graduate Certificate

This program is for pilots and others in aviation to further their knowledge of human factors in aviation.

## Admission Requirements

Applicants must have an undergraduate degree and a GPA of 2.75 or higher. The applicant must also submit:

1. Resume: The applicant's resumé should include the applicant's established employment history in the aviation industry, academic history, current contact information, and any additional relevant information, such as professional skills, training, presentations, publications, etc.
2. Reference letter: This letter must come directly from the reference and should come from someone who has evaluated the applicant's work. (This can be either in their capacity as an employee or as a student.)
3. Personal essay: Applicants must submit a brief, original essay (approximately 500-600 words) that addresses why they chose to apply to the program and how the program will help them achieve specific professional goals.

## Program Requirements

The Graduate Certificate in Aviation Human Factors requires a 3 credit Foundations course, 12 credits of electives, and successfully passing the Comprehensive Exam.

## Foundation

- AVIA 7110 - Foundations AV Human Factors \*\* **Credit Hours: (3)**

## Electives

- AVIA 7111 - Cognitive Ergonomics in AV Credit Hours: (2)
- AVIA 7113 - Judgment & Decision Making AV \*\* Credit Hours: (2)
- AVIA 7115 - Selection & Beh Health in AV \*\* Credit Hours: (2)
- AVIA 7117 - Flight Deck Ergonomics \*\* Credit Hours: (2)
- AVIA 7119 - Training and Simulation \*\* Credit Hours: (2)
- AVIA 7121 - HF Techniques and Methods \*\* Credit Hours: (2)

## Capstone

- AVIA 7998 - Comprehensive Exam Credit Hours: (0)

## Graduation Requirements

Students must successfully pass all courses (15 credits) in the program in line with all Graduate School requirements.

## Retention Requirements

Students will be required to meet all Graduate School retention requirements to stay in the program.

## Bioinformatics Graduate Certificate

### Graduate Certificate

The Certificate in Bioinformatics will provide training in genomics, statistics and computer science to students with a background in other scientific disciplines. The goals of the program are to provide:

1. Knowledge of probability and statistics, statistical tools, and application of statistical methods to genomics and health related areas.
2. Knowledge of computer programming, data structures and algorithm design.
3. Knowledge of genomic technologies and analysis of genomic data.

### Admission Requirements:

To apply for admission, students must fill out the University of Memphis online application. Applicants must have a bachelor's degree in science or engineering with a minimum GPA of 2.75. International students must have a TOEFL score of 550 (paper-based), 213 (computer-based), or 79 (internet-based).

Applicants must also submit the following documents to the Bioinformatics program coordinator ([bioinformatics@memphis.edu](mailto:bioinformatics@memphis.edu)):

1. A one page personal statement about their research interests, prior preparation and experience related to the objectives of the program, and long-range career/professional plans.
2. Two letters of recommendation.

Students who are currently enrolled in a Master's or Doctoral program at the University of Memphis or other universities will be eligible for admission into the Bioinformatics Certificate Program based on the recommendation from their graduate advisor.

## Program Requirements:

Completion of 15 semester hours distributed as follows:

- COMP 6001 - Intro to Python Programming **Credit Hours: (3)**  
or
- BINF 7201-7210 - Special Topics in Bioinformatics **Credit Hours: (3)**
- COMP 6030 - Design/Analysis Algorithms **Credit Hours: 3**
- BIOL 6490 - Intro Genomics/Bioinformatics **Credit Hours: (3)**  
or
- BINF 7701 - Adv. Genomics & Bioinformatics **Credit Hours: (3)**
- MATH 6611 - Intro Applied Statistics **Credit Hours: (3)**  
or
- PUBH 7150 - Biostatistical Methods I \*\* **Credit Hours: (3)**
- PUBH 7152 - Biostatistical Methods II \*\* **Credit Hours: (3)**  
or
- PUBH 7153 - Biostat. in Bioinformatics **Credit Hours: (3)**  
or

## Graduation Requirements:

1. Student must complete all five required courses with an average grade of B (3.0) or higher, for a total of 15 credit hours.
2. In the semester of graduation, the student must submit the Apply to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to the College Director of Graduate Studies by the deadline specified by the Graduate School.

## Business Economics Graduate Certificate

The courses in the certificate will provide tools in microeconomics and macroeconomics that will help managers make better business decisions. It will provide training needed for students to pass the Certified Business Economist (CBE) exam offered by the National Association of Business Economists (NABE).

## Graduate Certificate

The courses in the certificate will help managers translate data into models to make forecasts and to support decision making in a wide variety of fields, ranging from macroeconomics to finance and marketing. It will provide tools to be a "tech" economist, using econometrics and big data to analyze business problems.

## Admission Requirements

Same as college and University requirements.

## Program Requirements

The certificate program requires completion of 12 credit hours, chosen from the list of courses that follows:

- ECON 6315 - Applied Macroeconomics **Credit Hours: (3)**
- ECON 6810 - Quant Economic Analysis **Credit Hours: (3)**
- ECON 6550 - Game Theory/Strategic Analysis **Credit Hours: (3)**
- ECON 6023 - Personnel Economics **Credit Hours: 3**
- ECON 6120 - Economic Forecasting **Credit Hours: (3)**
- ECON 6820 - Econometrics **Credit Hours: (3)**

## Graduation Requirements

To obtain the certificate, a student must take four of the five classes listed above. They must achieve an average grade of 3.0 (B) or better across the four classes.

## Business Information Assurance Graduate Certificate

The Business Information Assurance (BIA) certificate prepares students to perform critical activities needed to properly manage an organization's assets related to a wide range of information security/privacy threats. Training related to effective managerial methodologies has become increasingly important in planning for possible breaches of security and handling resulting problems.

## Admission Requirements

1. Same as College and University requirements.
2. The certificate can be pursued concurrently with other graduate programs at the University.
3. Non-degree seeking graduate students may also pursue this certificate program of study. To be approved for the program, these students must submit evidence of this non-degree-seeking graduate student status, along with the completed application form, to the Department of Business Information and Technology for review.
4. Acceptance into the certificate program is not an implied acceptance into any master's degree program.

## Program Requirements

This program requires completion of 12 semester credit hours, as follows:

Nine hours (three courses):

- MIS 7455 - Cyber Ethics in IT **Credit Hours: (3) \***
- \*COMP 7900 - Cyber Ethics may be substituted for MIS 7455.
- MIS 7670 - Information Security Mgmt **Credit Hours: (3)**
- MIS 7615 - Enterprise Network & Security **Credit Hours: (3)**

Three hours (one course) from the following group:

- MIS 6160 - Mobile Application Development **Credit Hours: (3)**
- MIS 7650 - Info Syst Global Enterprise **\*\* Credit Hours: (3)**
- ACCT 7420 - Acct Databases/Systems **Credit Hours: (3)**

## Graduation Requirements

1. To obtain the certificate, a student must complete four courses, with three selected from the first group of courses and one selected from the second group of courses, for a total of 12 credit hours.

2. A minimum grade of B is required for each of the four courses.
3. In the semester of graduation, the student must submit an Apply to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to the College Director of Graduate Studies by the deadline specified by the Graduate School.

## **Business Project Management Graduate Certificate**

### **Graduate Certificate**

Graduate certificate program in Business Project Management prepares individuals for project management team work and to be project managers with specific emphasis on the integration of information systems and business processes. This certificate program will address the importance of project management education and address the need for trained professionals in project management.

The objectives of the certificate program include: Provide knowledge of the theoretical and practical concepts of managing IT projects, Understand and be able to perform project management activities, Understand and be able to use project management tools and techniques, Understand the role of project managers in the modern organization, Explore unique and particular challenges resulting from rapid technological change in dynamic business environments, and Exploring the role of the IS business professional in change management

### **Admissions Requirements:**

Same as College and University requirements.

The certificate can be pursued concurrently with other graduate programs at the University.

Non-degree seeking applicants must submit a brief (1-2 pages) statement that describes educational and work experiences in business, including their background in project management. GMAT and GRE scores are not required. However, acceptance into the certificate program is not an implied acceptance into any master's degree program.

### **Program Requirements:**

The following 4 courses must be satisfactorily completed for a total of 12 hours of credit.

One course from this group:

- MIS 7605 - Bus Database Systems \*\* Credit Hours: (3)
- COMP 7115 - Database Systems Credit Hours: (3)

One course from this group:

- MIS 7610 - Sys Analysis & Design \*\* Credit Hours: (3)
- COMP 7012 - Fndtns/Software Engr Credit Hours: (3)
- COMP 8012 - Fndtns/Software Engr Credit Hours: (3)

Both courses below:



- MIS 7671 - Project/Change Mgmt \*\* Credit Hours: (3)
- MIS 6672 - Project Mgmt Tools/Lead Credit Hours: (3)

## Graduation Requirements:

The student must complete all 4 required courses with an average grade of B (3.0) or higher, for a total of 12 credit hours.

In the semester of graduation, the student must submit an Apply to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to the College Director of Graduate Studies by the deadline specified by the Graduate School.

## Career and College Counseling Graduate Certificate

### Graduate Certificate

#### Admission to program

1. Students currently admitted to a graduate program at the U of M or other university in the social or behavioral sciences, or students already holding a graduate degree in the social or behavioral sciences, may apply for admission to the Graduate Certification Program in Career and College Counseling.
2. Non-degree seeking students who hold a bachelor's degree or higher who meet the University of Memphis's graduate school requirements. Students must apply to both the certification program and graduate school as a non-degree seeking student.

#### Application Process

1. In state student must submit copy of their Tennessee Bureau of Investigations background check.  
<http://www.memphis.edu/tep/pdfs/TBI-BackgroundCheck.pdf>
2. Out of state students must submit proof of a commensurate state endorsed background check.
3. If you are eligible to apply for the certification program
  - Complete the certification application
  - Submit two letters of recommendation from a current or previous employers, and or previous university instructor
  - Student GRE scores
  - A sealed copy of official student transcripts
  - Copy of background check
  - A letter describing the reasons why the student is applying for the certification programs that discusses how the program supports students prior interests and experience and future career goals.
4. For students with no graduate program experience, a minimum undergraduate grade point of average of 2.75 is recommended for admission at the undergraduate level.

### Program Requirements

The online program is designed to be completed in one year across four semesters: Summer I & II, Fall and Spring. The classes are designed to build student's knowledge base incrementally and it is recommended that courses are taken in the following sequence

#### General Education including transfer of 19 hour pre-major paths

#### Major Field Core:

- COUN 7824-COUN 8824 College Admission Counseling (3 hours) Summer I
- COUN 7825-COUN 8825 Strategies for College and Career Counseling in K-12 Settings (3 hours) Summer II
- COUN 7826-COUN 8826 School Counseling to Close the Achievement Gap (3 hours) Fall
- COUN 7827-COUN 8827 Capstone Course in College and Career Counseling (3 hours) Spring

**Note:**

Students concurrently enrolled in the Masters program or working toward school counseling licensure can substitute this capstone course for a Secondary Practicum or Internship class. Students electing this option can expect to spend time in a high school and college setting working alongside the college counselors, academic advisors, and career counselors.

## Clinical Mental Health Counseling Graduate Certificate

The University of Memphis' Certificate in Clinical Mental Health Counseling is intended for individuals who are currently pursuing a Masters degree in school counseling at The University of Memphis, or have obtained a Masters degree in school counseling, rehabilitation counseling, or college counseling. The certificate will allow students to complete Tennessee's Licensed Professional Counselor (LPC) educational requirements as well as the State's Mental Health Service Provider (MHSP) educational requirements.

### Admission Requirements

1. Hold a graduate degree in counseling from a CACREP program
2. Currently enrolled in the School Counseling or Rehabilitation Program at The University of Memphis
3. Minimum Masters GPA of 3.0

### Program Requirements

- COUN 7710 - Addiction Counseling **Credit Hours: 3**
- COUN 7885 - Legal/Eth Issues Coun **Credit Hours: (3)**
- COUN 7630 - Clinical Mental Health Coun **Credit Hours: (3)**
- COUN 7632 - Intern Cmty/Mntl Hlth **Credit Hours: (4-9)**
- CPSY 7700 - Intrvtns Mntl Disordrs **Credit Hours: (3)**

## Clinical Social Work Graduate Certificate

### Graduate Certificate

The Graduate Certificate in Clinical Social Work is designed for MSW or DSW students who want to deepen their clinical skills. The graduate certificate will provide an in-depth clinical curriculum in advanced skills and cutting-edge innovations necessary for students who want to pursue licensure in clinical social work and work in clinical practice settings.

### Admission Requirements:

The Graduate Certificate in Clinical Social Work may be obtained by current MSW and DSW students or MSW and DSW graduates.

The graduate certificate program in Clinical Social Work can be pursued concurrently with the Master of Social Work program, Doctor of Social Work program or after completion of the Master of Social Work. Concurrent or prior enrollment in an accredited Master of Social Work program is required. Students may fulfill admissions requirements in one of the following two ways.

- Admission into the Master of Social Work at the University of Memphis.
- Completion of the Master of Social Work at any university accredited by the Council on Social Work Education (CSWE).

## Program Requirements:

Courses (12 credit hours) – Choose four courses from the following:

- SWRK 6061 - Substance Abuse Treatment \*\* Credit Hours: (3)
- SWRK 7005 - Assessmnt,Diag,Psychopath \*\* Credit Hours: (3)
- SWRK 7013 - Treatment of Trauma Credit Hours: (3)
- SWRK 7028 - Advanced Individual Practice Across Systems Credit Hours: 3
- SWRK 7040 - Advanced SW Theory \*\* Credit Hours: (3)
- SWRK 7041 - Play Therapy \*\* Credit Hours: (3)
- SWRK 7948 - Clinical Social Work Process & Technique Credit Hours: (3)

## Graduation Requirements:

1. Students must complete all four required courses with an average grade of B (3.0) or higher for a total of 12 credit hours.
2. Students may earn no more than 3 credit hours of C+, C, or C- grades.

## Retention Requirements:

All students are required to maintain a cumulative GPA of at least 3.00. Should the student's cumulative GPA fall below that mark, a period of one semester will be allowed to correct the deficiency. At the discretion of the chair, the director of graduate studies in the student's college, and the Assistant Vice Provost for Graduate Studies, this period may be extended one additional semester. No more than 6 hours of "C-," "C" or "C+" will be applied toward meeting Master of Social Work degree requirements. "D+," "D," and "F" will not be applied towards the Master of Social Work degree requirements. All students who fall below a GPA of 3.0 for one semester, and all students who earn a grade of "D+," "D," or "F" will be automatically referred to meet with the program retention committee the following semester.

## Cognitive Science Graduate Certificate

The primary objective of this certificate is to supply graduate students interested in Cognitive Science with interdisciplinary training in the 3 major fields of Cognitive Science, Cognitive Psychology, Artificial Intelligence, and Linguistics. The focus of these courses is to develop core competencies to support research in cognitive science as well as applications in human-computer interaction, information systems, advertising and marketing, and design. While the program will be administered by the Institute for Intelligent Systems, the courses are being taught by seven different departments in four different colleges (Arts and Sciences, Communication Sciences and Disorder, Engineering, and Education).

## Admissions Requirements

Applicants to the Cognitive Science Graduate Certificate may be admitted in any semester. The certificate will be promoted across all departments in the University and within the Institute for Intelligent Systems. Students currently admitted to a graduate program at the U of M may apply for admission. In rare instances, students who have not been admitted to a graduate program must apply to the Graduate School for admission as Non-Degree Seeking students; they will be considered for admission on an individual basis.

## Program Requirements

The program requires completion of 15 semester credit hours, as this is an interdisciplinary certificate there is a requirement that either

1. Courses are chosen from three or more prefixes, or
2. Courses are chosen from two prefixes: 9 credits hours in one prefix and 6 credit hours in the second prefix.

### Core Component (3 hours)

The following course is required:

PSYC 7514-PSYC 8514, Seminar: Cognitive Science (Same as COMP 7514-COMP 8514, PHIL 7514-PHIL 8514 , and AUSP 7514-AUSP 8514).

### Cognitive Psychology Component (3 hours)

One of the following courses is required:

- EDPR 7121 - Learning & Cognition \*\* Credit Hours: (3)
- EDPR 8121 - Learning & Cognition Credit Hours: (3)
- EDPR 7149 - Sem Cognitive Processes Credit Hours: (3)
- EDPR 8149 - Sem Cognitive Processes Credit Hours: (3)
- PSYC 7207 - Developmental Psyc Credit Hours: (3)
- PSYC 8207 - Developmental Psyc Credit Hours: (3)
- PSYC 7208 - Psyc Of Perception Credit Hours: (3)
- PSYC 8208 - Psyc Of Perception Credit Hours: (3)
- PSYC 7211 - Cognitive Processes Credit Hours: (3)
- PSYC 8211 - Cognitive Processes Credit Hours: (3)
- PSYC 7213 - Cognitive Science Credit Hours: (3)
- PSYC 8213 - Cognitive Science Credit Hours: (3)
- PSYC 7217 - Social Psychology Credit Hours: (3)
- PSYC 8217 - Social Psychology Credit Hours: (3)
- PSYC 7219 - Soc/Persnlty Devel Credit Hours: (3)
- PSYC 8219 - Soc/Persnlty Devel Credit Hours: (3)

- PSYC 7220 - Social Cognition Credit Hours: (3)
- PSYC 8220 - Social Cognition Credit Hours: (3)
  
- PSYC 7222 - Psychology Human Memory Credit Hours: (3)
- PSYC 8222 - Psychology Human Memory Credit Hours: (3)
  
- PSYC 7407 - Cognition & Emotion Credit Hours: (3)
- PSYC 8407 - Cognition & Emotion Credit Hours: (3)
  
- PSYC 7314 - Programming Computation in Psych Credit Hours: (3)
- PSYC 8314 - Programming Computation in Psych Credit Hours: (3)
  
- PSYC 7701 - Behavioral Neuroscience Credit Hours: (3)
- PSYC 8701 - Behavioral Neuroscience Credit Hours: (3)
  
- A USP 6300 - Autism: Communic & Socializtn Credit Hours: (3)

### Computational Modeling and Artificial Intelligence Component (3 hours)

One of the following courses is required:

- A USP 8017 - Digitl Signl Proc Sp/Hear Credit Hours: (3)
  
- EECE 7216 - Computer Vision Credit Hours: (3)
- EECE 8216 - Computer Vision Credit Hours: (3)
  
- EECE 7262 - Logicl Fndtns Artf Intl Credit Hours: (3)
- EECE 8262 - Logicl Fndtns Artf Intl Credit Hours: (3)
  
- EECE 7266 - Prolog Proc/Intel Syst Credit Hours: (3)
- EECE 8266 - Prolog Proc/Intel Syst Credit Hours: (3)
  
- COMP 6118 - Introduction to Data Mining Credit Hours: (3)
  
- COMP 6720 - Intro Artificial Intlg Credit Hours: (3) (Same as EECE 6720)
- COMP 6730 - Expert Systems Credit Hours: (3) (Same as EECE 6730.)
  
- COMP 7118 - Data Mining \*\* Credit Hours: (3)
- COMP 8118 - Data Mining \*\* Credit Hours: (3)
  
- COMP 7150 - Fundamentals of Data Science \*\* Credit Hours: (3)
- COMP 8150 - Fundamentals of Data Science \*\* Credit Hours: (3)
  
- COMP 7282 - Evolutionry Computation Credit Hours: (3)
- COMP 8282 - Evolutionry Computation Credit Hours: (3)

- COMP 7720 - Artificial Intelligence **Credit Hours: (3)**
- COMP 8720 - Artificial Intelligence **Credit Hours: (3)** (Same as EECE 7720-EECE 8720)
  
- COMP 7740 - Neural Networks **Credit Hours: (3)**
- COMP 8740 - Neural Networks **Credit Hours: (3)** (Same as EECE 7740-EECE 8740)
  
- COMP 7745 - Machine Learning \*\* **Credit Hours: (3)**
- COMP 8745 - Machine Learning \*\* **Credit Hours: (3)**
  
- COMP 7760 - Control Auto Agents **Credit Hours: (3)**
- COMP 8760 - Control Auto Agents **Credit Hours: (3)**
  
- COMP 7770 - Knowledge Rep/Reason **Credit Hours: (3)**
- COMP 8770 - Knowledge Rep/Reason **Credit Hours: (3)**
  
- COMP 7780 - Natural Lang Processng **Credit Hours: (3)**
- COMP 8780 - Natural Lang Processng **Credit Hours: (3)** (Same as PSYC 7221-PSYC 8221)
  
- IIS 6511 - Introduction to Applied Computational Linguistics **Credit Hours: 3**
  
- PSYC 7223 - Intelligent Tutoring **Credit Hours: (3)**
- PSYC 8223 - Intelligent Tutoring **Credit Hours: (3)**
  
- PSYC 7313 - Computational Models Cog Sci **Credit Hours: (3)**
- PSYC 8313 - Computational Models Cog Sci **Credit Hours: (3)**
  
- PSYC 7314 - Programming Computation in Psych **Credit Hours: (3)**
- PSYC 8314 - Programming Computation in Psych **Credit Hours: (3)**

### Language and Linguistics Component (3 hours)

One of the following courses is required:

- A USP 7002 - Sem Comm Sciences **Credit Hours: (1-3)**
- A USP 8002 - Sem Comm Sciences **Credit Hours: (1-3)**
  
- A USP 7000 - Speech Science **Credit Hours: (3)**
- A USP 8000 - Speech Science **Credit Hours: (3)**
  
- A USP 7006 - Lang & Speech Devel **Credit Hours: (3)**
- A USP 8006 - Lang & Speech Devel **Credit Hours: (3)**
  
- A USP 7008 - Acoustic/Percept Phonetics **Credit Hours: (3)**
- A USP 8008 - Acoustic/Percept Phonetics **Credit Hours: (3)**
  
- A USP 7011 - Psycholinguistics **Credit Hours: (3)**
- A USP 8011 - Psycholinguistics **Credit Hours: (3)**

- ENGL 7507 - Empirical Mthds Ling Rsrch Credit Hours: (3)
- ENGL 8507 - Empirical Mthds Ling Rsrch Credit Hours: (3)
- ENGL 7508 - Corpus Linguistics Credit Hours: (3)
- ENGL 8508 - Corpus Linguistics Credit Hours: (3)
- ENGL 7511 - Survey of Linguistics \*\* Credit Hours: (3)
- ENGL 8511 - Survey of Linguistics Credit Hours: (3)
- ENGL 7512 - Morphology and Syntax Credit Hours: (3)
- ENGL 8512 - Morphology and Syntax Credit Hours: (3)
- ENGL 7590 - Appl/Theory Linguistics Credit Hours: (3)
- ENGL 8590 - Appl/Theory Linguistics Credit Hours: (3)
- PSYC 7530 - Psychology of Language Credit Hours: 3
- PSYC 8530 - Psychology of Language Credit Hours: 3

### Electives Course (3 hours)

The Cognitive Science Seminar or any course listed for one of the components may be taken as an elective. The courses below may also be taken as electives. Other elective courses may be selected in consultation with the program director.

- AUSP 8112 - Sem Audiology Credit Hours: (3)
- COMP 6151 - Intro to Data Science Credit Hours: 3
- EDPR 7150 - Motivation Credit Hours: (3)
- EDPR 8150 - Motivation Credit Hours: (3)
- EDPR 7521 - Introduction to Research Design and Methodology \*\* Credit Hours: (3)
- EDPR 8521 - Intro Res Design & Methodology Credit Hours: (3)
- EDPR 7541 - Stat Meth App Ed I \*\* Credit Hours: (3)
- EDPR 8541 - Stat Meth App Ed I \*\* Credit Hours: (3)
- IDT 7070 - Instructional Design Process I \*\* Credit Hours: (3)
- IDT 8070 - Instructional Design Process I Credit Hours: (3)
- IDT 7074 - Thry/Models Instructnal Design \*\* Credit Hours: (3)
- IDT 8074 - Thry/Models Instructnal Design Credit Hours: (3)
- IDT 7090 - Dev Interactive Lrng Envirnt I \*\* Credit Hours: (3)
- IDT 8090 - Dev Interactive Lrng Envirnt I Credit Hours: (3)
- MATH 6611 - Intro Applied Statistics Credit Hours: (3)

- MATH 6614 - Probability/Statistics Credit Hours: (3)
- MATH 6685 - Statistical Learning I Credit Hours: (3)
  
- PHIL 6421 - Philosophy Of Mind Credit Hours: (3)
  
- PSYC 7301 - Research Design & Meth Credit Hours: (3)
- PSYC 8301 - Research Design & Meth Credit Hours: (3)
  
- PSYC 7302 - Adv Statistics Psych I Credit Hours: (3)
- PSYC 8302 - Adv Statistics Psych I Credit Hours: (3)

## Graduation Requirements:

1. The student must complete all five Courses (4 required, 1 elective) with an average grade of B (3.0) or higher, for a total of 15 credit hours.
2. In the semester of graduation, the student must submit the Apply to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to the College Director of Graduate Studies by the deadline specified by the Graduate School.

## Communication Sciences and Disorders and Public Health Graduate Certificate

The purpose of the "Communication Sciences and Disorders and Public Health" certificate is to provide training to practicing audiologists (AuDs), speech-language pathologists (SLPs), AUD, and SLP students, and other communication healthcare professionals on the frameworks of public health and how they can be applied to speech, language, and hearing health initiatives, thus improving communication on a population level. The certificate requires a firm foundation in public health concepts to apply this knowledge to the specialized area of communication sciences and disorders. The certificate allows for required coursework and electives in related fields.

## Admission Requirements:

To be eligible for the certificate program in Communication Sciences and Disorders and Public Health:

1. Applicants must be a graduate student at the University of Memphis, a graduate student studying in a field of public health or hearing sciences and disorders or have a completed Doctor of Audiology, Master of Arts or Sciences in Speech-Language Pathology or related area, or a related degree with a GPA of at least 3.00.
2. Applicants who do not speak English as their primary language are required to meet the University's minimum TOEFL score.
3. To apply, students must submit an application form, a current or completed graduate transcript, and a one-page letter of intent to the School of Communication Sciences and Disorders for review. Letters of intent should describe reasons for pursuing the certificate, relevant background and experiences, and/or professional goals or plans.
4. Admission to this certificate program does not imply acceptance into any graduate program in the School of Communication Sciences and Disorders or within the university.

## Program Requirements:

Students are required to take the 3 required courses listed below along with two 3-hour electives.



## Required Courses (9 credit hours):

- AUSP 7132/8132 Special Topics: Communication Sciences and Disorders and Public Health
- PUBH 7170 - Epidemiology in PUBH I\*\* Credit Hours: (3)
- PUBH 7180 - Foundations of PUBH \*\* Credit Hours: (3)

## Electives (6 credit hours):

- AUSP 7505 - Interprofessional Educ & Pract Credit Hours: (1-3)
- HADM 7105 - Hlth Policy & Org Hlth Svs \*\* Credit Hours: (3)
- PUBH 7002 - Comm Hlth Assessmt & Prog Plan \*\* Credit Hours: (3)
- PUBH 7014 - Public Health Communication Credit Hours: (3)
- PUBH 7130 - Social Determinants of Health \*\* Credit Hours: (3)
- PUBH 7132 - Health Program Evaluation \*\* Credit Hours: (3)
- PUBH 7160 - Soc/Behav Science Principles \*\* Credit Hours: (3)

## Retention/Graduation Requirements:

1. To obtain the certificate, students must complete all three of the required courses (9 credits) and two electives (6 credits) for a total of 15 credits with a minimum grade of B (GPA = 3.00) in each course.
2. In the semester of graduation, the student must submit an Intent to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to the Director of Graduate Studies by the deadline specified by the Graduate School.

# Cyber Security and Information Assurance Graduate Certificate

## Graduate Certificate (GCIA)

This certificate program highlights important aspects of information security and assurance technologies. The University of Memphis is designated by DHS and NSA as a National Center of Academic Excellence in Information Assurance, and its IA courses are accredited by the Committee for National Security Systems for Computer Security standards 4011, 4012, and 4013. These security standards specify the minimum knowledge, skills, and abilities required to fulfill the duties, respectively, of an Information Systems Security Professional, Senior System Manager, and System Administrator. The IA certificate program is administered by the Computer Science Department, the courses are taught by different departments and colleges, and any graduate student meeting admission requirements will be eligible to join the certificate program. [Click here to view corresponding gainful employment data.](#)

The objectives of the certificate program are as follows:

- Provide knowledge of contemporary and historical trusted computing systems from an operational, theoretical, and design standpoint.
- Detailed discussion on security-specific hardware, software, and methodologies.
- A certificate program meeting national standards that will prepare students to serve the state and the country in a critical area of vulnerability in information infrastructure.
- Educate students on ethical, management, policies and legal issues, and requirements in the field of information assurance

## Admission Requirements

The certificate program in Cyber Security and Information Assurance may be pursued concurrently with other graduate programs at the university. In particular, students currently admitted to a graduate program at the U of M may join this certificate program. To apply, students must submit the application form ([http://www.memphis.edu/cs/pdfs/application\\_info\\_assurance.docx](http://www.memphis.edu/cs/pdfs/application_info_assurance.docx)) and transcripts of prior graduate study.

Non-degree graduate students may also pursue this certificate program of study. For example, professionals who have a BS in computer science, computer engineering, or a closely related field, or who have a bachelor's degree in another field and have been working in the Information Technology (IT) field for at least three years, can apply to the program. These applicants are required to submit a brief (one- to two-page) statement of educational and work experience in the computing field, including their background in computer security, in addition to the requirements above. Students must apply both to the program and to the University.

GRE scores are not required for non-degree students' admission into the Cyber Security and Information Assurance certificate program. Acceptance to the certificate program is not an implied acceptance into the MS program in Computer Science.

## Program Requirements

The certificate program requires completion of 12 semester credit hours: 6 from the list of major Cyber Security and Information Assurance courses and 6 from the list of electives.

### Major Cyber Security and Information Assurance Courses

- **COMP 6410 - Computer Security Credit Hours: (3)**
- COMP 7120-COMP 8120 (Same as MIS 7670). Cryptography and Data Security
- COMP 7327-COMP 8327. Network and Internet Security

#### Note:

Non-computer science students must take the prerequisite COMP 3825 (Networking and Information Assurance) or equivalent before taking any of the above COMP courses.

### Cyber Security and Information Assurance Electives

- **COMP 6272 - System Admin and Unix Prog Credit Hours: (3)**
- **COMP 7900 - Cyber Ethics Credit Hours: (3)**
- **COMP 7125 - Computer Forensics Credit Hours: (3)**
- LAW 386. Cyber Law
- **CJUS 6180 - Corporate and White Collar\*\* Credit Hours: 3**

## Retention

In order to continue in the program, students must maintain a GPA of at least 3.0.

## Graduation

To obtain the certificate, a student must complete four of the above-mentioned courses (2 core courses and 2 electives), with an average grade of 3.0 (B) or higher, for a total of 12 credits, at least six of which must be from the 7000 level or higher.

#### Note:

A maximum of 15 credits may be transferred from certificate programs to non-related graduate degrees, subject to approval by the graduate program. Moreover, all credits from a certificate program may be transferred to a relevant graduate degree where the entire content of the given certificate could satisfy some of the requirements of a graduate degree. See specific department requirements for additional information and the Graduate School policy.

## Data Analytics for Management Graduate Certificate

### Admission Requirements

Same as College and University requirements.

### Program Requirements

- MIS 7700 - Fundamentals of Data Analytics Credit Hours: (3)
- MIS 7620 - Business Machine Learning I \*\* Credit Hours: (3)
- MIS 7710 - Web Analytics Credit Hours: (3)
- MIS 7720 - Bus. Artificial Intelligence Credit Hours: (3)

### Graduation Requirements

To obtain the certificate, a student must complete all four of the required courses with an average grade of 3.0 (B) or higher, for a total of 12 credits.

### Retention Requirements

Students in the certificate program must comply with all retention standards of the Graduate School at the University of Memphis. All students are required to maintain a cumulative GPA of at least 3.0. Should the student's cumulative GPA fall below that mark, a period of one semester will be allowed to correct the deficiency. Students failing to improve their GPA to an acceptable level in that time will be dismissed from the program.

## Data Analytics for Technology Graduate Certificate

### Graduate Certificate

The business analytics discipline has become very important in information systems and industry, due to increased access to big data, unstructured and structured data, and strategic business decision making. These increasingly complex decision making capabilities lead directly to competitive advantage and increased profits. Thus, trained business analysts with skills in addressing data management and business intelligence and analytics are in high demand.

### Admission Requirements:

Same as College and University requirements.

## Program Requirements:

The following 4 courses must be satisfactorily completed for a total of 12 hours of credit.

Three hours (one course) from this group:

- MIS 7190 - Programing For Business **Credit Hours: (3)**

Three hours (one course) from this group:

- MIS 7660 - Advanced Data Management **Credit Hours: (3)**
- COMP 7116 - Adv Database Systems **Credit Hours: (3)**

Three hours (one course) from this group:

- MIS 7620 - Business Machine Learning I \*\* **Credit Hours: (3)**
- COMP 7118 - Data Mining \*\* **Credit Hours: (3)**

Three hours

- MIS 7621 - Business Machine Learning II **Credit Hours: (3)**

## Graduation Requirements:

- The student must complete all 4 required courses with an average grade of B (3.0) or higher, for a total of 12 credit hours.
- In the semester of graduation, the student must submit an Apply to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to the College Director of Graduate Studies by the deadline specified by the Graduate School.

## Data Science Graduate Certificate

### Graduate Certificate (GCDS)

This certificate program in Data Science aims to provide interdisciplinary training in the important aspects of the rapidly emerging area of Data Science. With large volumes of data being generated every day from multiple sources (including business data, biomedical data, educational data, science data, engineering data, and personal data), the importance of systematic and rigorous approaches to understanding and putting these large volumes of data to good use is now well recognized. Job growth in this area is in overdrive. The Data Science certificate is being proposed to help train a workforce of future data scientists able to tackle the challenges and reap the promising benefits of vast amounts of data available in all parts of the economy, society, and government. At the end of the program, students will exhibit a deep understanding of how to manage large volumes of data, discover patterns and make inferences from data, use models to make predictions about potential solutions, and quantify the reliability and effectiveness of the outcomes. Equipped with such knowledge and skills, the graduates will make significant contributions towards improving the products, processes, and services offered by commercial and non-commercial organizations

as well as the government. The Data Science certificate program will be administered by the Computer Science Department, although some courses may be taught by different departments, and any graduate student meeting admission requirements to the certificate program will be eligible to join it from any other areas.

The specific objectives of the certificate program are to:

- Provide training on data collection, storage, manipulation, visualization, and privacy;
- Provide a strong background in programming, algorithms and methods for statistical analysis in data mining and machine learning;
- Train students in the use of software tools and systems for processing big data;
- Educate students on ethical, management, policies and legal requirements in the field of data science.

## Admission Requirements

The certificate program in Data Science may be pursued concurrently with other graduate programs offered by the university. In particular, students currently admitted to any graduate program at the U of M may join this certificate program. To apply, students must submit the application form and transcripts of prior graduate study.

Non-degree graduate students may also pursue this certificate program of study. For example, professionals who have a BS in computer science, computer engineering, mathematics, or other fields and who are proficient with a programming language such as Java or a statistical package such as R, are eligible for admission into the program. Applicants satisfying these requirements are required to submit a brief (one- to two-page) statement of relevant educational and work experience in data analysis in addition to the requirements above. Prospective students must apply for admission both to the program and to the Graduate School.

GRE scores are not required for non-degree students' admission into the Data Science certificate program. Acceptance to the certificate program does not imply acceptance into any other graduate in Computer Science.

## Program Requirements

The certificate program requires completion of 12 semester credit hours (6 from the list of core courses and 6 from the list of electives) after admission into the certificate program.

### Data Science Core Courses

- COMP 7150 - Fundamentals of Data Science \*\* Credit Hours: (3)
- COMP 8150 - Fundamentals of Data Science \*\* Credit Hours: (3)
  
- COMP 7745 - Machine Learning \*\* Credit Hours: (3)
- COMP 8745 - Machine Learning \*\* Credit Hours: (3)
- or
- COMP 6745 - Intro to Machine Learning Credit Hours: (3)

Note:

COMP 6001 - Intro to Python Programming or equivalent is required for taking any of the core courses.

### Data Science Electives

- COMP 6118 - Introduction to Data Mining Credit Hours: (3)
- COMP 7115 - Database Systems Credit Hours: (3)
- COMP 7116 - Adv Database Systems Credit Hours: (3)
- COMP 8116 - Adv Database Systems Credit Hours: (3)
- COMP 7118 - Data Mining \*\* Credit Hours: (3)
- COMP 8118 - Data Mining \*\* Credit Hours: (3)
- COMP 7130 - Inform Retrieval/Web Search Credit Hours: (3)
- COMP 8130 - Inform Retrieval/Web Search Credit Hours: (3)
- COMP 7740 - Neural Networks Credit Hours: (3)
- COMP 8740 - Neural Networks Credit Hours: (3)
- COMP 7747 - Adv Topics in Machine Learning Credit Hours: (3)
- COMP 8747 - Adv Topics in Machine Learning Credit Hours: (3)
- COMP 7780 - Natural Lang Processng Credit Hours: (3)
- COMP 8780 - Natural Lang Processng Credit Hours: (3)
- MATH 7670 - App Stochastic Models Credit Hours: (3)
- MATH 8670 - App Stochastic Models Credit Hours: (3)
- MATH 7680 - Bayesian Inference Credit Hours: (3)
- MATH 8680 - Bayesian Inference Credit Hours: (3)
- PSYC 7302 - Adv Statistics Psych I Credit Hours: (3)
- PSYC 8302 - Adv Statistics Psych I Credit Hours: (3)

## Retention

In order to continue in the program, students must maintain a GPA of at least 3.0.

## Graduation

To obtain the certificate, a student must complete four of the above-mentioned courses (2 core courses and 2 electives), with an average grade of 3.0 (B) or higher, for a total of 12 credits, at least three of which must be from the 7000 level or higher.

### Note:

A maximum of 15 credits may be transferred from certificate programs to non-related graduate degrees, subject to approval by the graduate program. Moreover, all credits from a certificate program may be transferred to a relevant graduate degree where the entire content of the given certificate could satisfy some of the requirements of a graduate degree. See specific department requirements for additional information and the Graduate School policy.

## Disabilities Studies Graduate Certificate

### Interdisciplinary Graduate Certificate

### Programs Admissions

Applicants will apply to the specific certificate program (i.e. Interdisciplinary Graduate Certificate in Disabilities Studies). They should submit:

1. transcript of undergraduate degree program and transcripts of prior and current graduate study;
2. three letters of recommendation; and
3. a letter describing reasons for wishing to take a graduate certificate in the area of disability studies and how the program corresponds with prior experience and anticipated career plans.

## Program Requirements

### Required Courses:

- COUN 6913 - Med/Psyc Aspects/Rehab Credit Hours: (3)
- COUN 6901 - Prin/Tech/Rehab Counsel Credit Hours: (3)
- UNIV 7400 - Family Disability Law and Practice

### Choose one 3-hour elective from the following list:

- ANTH 6531 - Alcohol/Drugs/Culture Credit Hours: (3)
- PLAN 7201 - Smart City and Urban Infrastructure Credit Hours: (3)
- CJUS 7510 - Law And Society Credit Hours: (3)
- POLS 7111 - Issues in Health Services Administration
- HADM 7114 - Long Term Care Administration
- HADM 7115 - Public Health Organizatn/Mgmt Credit Hours: (3)
- PSYC 7217 - Social Psychology Credit Hours: (3)
- PADM 6208 - Mental Health Policy and Law
- PADM 7604 - Social Science In Law Credit Hours: (3)
- SOCI 7411 - Social Stratification Credit Hours: (3)
- SOCI 7512 - Deviance and Diversity
- COMM 7012 - Seminar Health Comm \*\* Credit Hours: (3)
- NUTR 7212 - Appl Nutr for Health Credit Hours: (3)
- HPRO 7182 - Health Promotion \*\* Credit Hours: (3)
- HPRO 7702 - Contemporary Hlth Issue Credit Hours: (3)
- HPRO 7703 - Life Phys Act & Hlth Credit Hours: (3)
- SPED 7000 - Intro Excpotional Learnr \*\* Credit Hours: (3)
- UNIV 7796 - Independent Study Credit Hours: (1-3)

Total Hours Required: 12

## Distance Dietetics Internship Graduate Certificate

This program serves students in various areas of the country who have a desire to complete a dietetics internship but are limited to a certain demographic location. Our main objective is to provide dietetic students a meaningful opportunity to complete the required 1,200 experiential learning hours to be eligible for the Registered Dietitian/Nutritionist Exam and to gain employment. Consistent with the missions of our university, school, and unit, the mission of the Dietetic Internship program is to prepare graduates to be able to work as entry level dietitians by providing excellent education, research, and practice experiences.

## Program Requirements

Consisting of 15 credit hours, students complete the following required courses:

- NUTR 7481 - Clin Intern NUTR **Credit Hours: (6)** (6 credit hours, taken twice)

## Early Music Certificate

The Early Music Certificate recognizes students in the Rudi E. Scheidt School of Music who have made a specialty or subspecialty in the study of historically-informed performance of repertoires before 1800. It has three components: coursework focusing on these repertoires, lessons on a historical instrument or voice, and a public performance. The certificate may be earned concurrently with or independent of any degree(s) or certificate program(s) in the School.

## Admission Requirements

An audition on the student's intended primary instrument is required showing sufficient ability for this specialization as determined by the appropriate instrument/voice area in the School of Music.

## Program Requirements

The Early Music Certificate recognizes students in the Rudi E. Scheidt School of Music who have made a specialty or subspecialty in the study of historically-informed performance of repertoires before 1800. It has three components: coursework focusing on these repertoires, lessons on a historical instrument or voice, and a public performance. The certificate may be earned concurrently with or independent of any degree(s) or certificate program(s) in the School.

### **9 credits MUHL coursework from the list below:**

MUHL 4803 Independent Study\*  
 MUHL 4/6009 Choral Literature I  
 MUHL 4/6018 Oratorio Literature\*  
 MUHL 4/6022 Early Chamber Music  
 MUHL 4/6407 Opera History\*  
 MUHL 7/8401 Medieval Music  
 MUHL 7/8402 Renaissance Music  
 MUHL 7/8403 Baroque Music  
 MUHL 7/8404 Classic Music  
 MUHL 7/8408 Independent Study\*  
 MUHL 7/8505 Seminar in Musicology\*  
 MUHL 7/8506 Composer Studies\*  
 MUHL 7/8531 Early Musical Notations  
 MUHL 7/8551 Performance Practice I  
 MUHL 7/8552 Performance Practice II  
 (Special Topics)\*

\*Topic or paper topic as appropriate per EMC committee.

### **3 credits lessons on a historical instrument or voice**

## Public Performance

3 semesters Collegium Musicum or approved solo with Collegium or Recital on a hist. instrument or voice or approved inclusion of hist. piece on recital.



(0–3 credits)

Total hours: 12–15 credits

## Graduation Requirements

Successful completion of all requirements listed above.

## Retention Requirements

Continuous successful completion of certificate requirements.

# Entrepreneurial Media Graduate Certificate

## Graduate Certificate

The Entrepreneurial Media Certificate program prepares students to start their own media-related businesses or bring innovation to legacy media organizations. It will emphasize knowledge of business fundamentals, marketing, advertising and public relations strategies for new businesses, and creating digital, multimedia content for media products or promotions.

Objectives of this program include:

1. To prepare students for today's media landscape, which is undergoing unprecedented disruption as new digital technologies and changing economic realities have upended the practices and the business models of traditional media organizations. Students need to be able to understand this upheaval and be equipped to recognize opportunities for new businesses and ways traditional organizations can evolve to meet evolving demands.
2. To equip students with the skills they need not only to start their own media-related businesses but also to work as "intrapreneurs" within existing companies and to initiate and sustain change initiatives. They will learn startup fundamentals such as how to turn ideas into business plans, assess customer needs, pitch investors, and develop marketing, public relations and advertising strategies.
3. Students will hone their ability to use social media and a variety of cutting-edge digital tools necessary to market and create content for new media businesses.

## Program Admission

To apply to the Entrepreneurial Media Certificate Program, students must submit the following:

1. Cover letter expressing interest in the program and qualifications
2. Resume/CV
3. BA or BS degree transcript

## Program Requirements

Completion of 12 semester hours distributed as follows:

Required Courses: Total of 6 credit hours

- JRSM 7100 - Entrepreneurial Media \*\* Credit Hours: (3)

- JRSM 7330 - Social Media & Community Engagement \*\* Credit Hours: (3)

Electives: 6 credit hours chosen from the following:

- UNIV 7110 - Internship Credit Hours: (1-6) Launch Memphis 48 Hour Launch
- UNIV 7110 - LaunchMemphis BarCamp, SocialCamp, MobileCamp
- UNIV 7110 - Business Plan Boot Camp
- UNIV 7110 - Launch Memphis ad hoc mentoring
- JRSM 7650 - Media Startup Practicum Credit Hours: (3)
- MGMT 7270 - Ventur/Bldg/Sust Succ Enterp Credit Hours: (3)
- FIR 7648 - Entrepreneurial Finance Credit Hours: (3)
- ACCT 7412 - Legal/Acctg Aspects Entrep Credit Hours: (3)

## Graduation Requirements

In order to graduate with the certificate students must:

1. Complete Certificate Program course requirements within a period of six years with a B or above average.
2. In the semester of graduation, the student must submit the Apply to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to the College Director of Graduate Studies by the deadline specified by the Graduate School.

## Faith and Health Graduate Certificate

### Graduate Certificate

Faith and health have a long history of integration, especially in relation to providing much needed care to underserved populations. There are instances of health needs influencing faith based practices, while theological frameworks have a long history of influencing health practices and providing care to those in need. Through collaboration with the Church Health Center, this graduate certificate focuses on the intersection of faith and health—providing students with knowledge and understanding of how these two key areas influence one another in providing patient care. This certificate is ideal for students interested in working within the medical field, within public health or faith-based healthcare organizations, as well as similar professions. Consisting of 12 credit hours, students will take part in two hybrid (in-class/on-line) courses and two practicum courses (utilizing the Experiential Learning Credit; see [www.memphis.edu/innovation/elc/experiential\\_learning.php](http://www.memphis.edu/innovation/elc/experiential_learning.php)).

### Admission Requirements

- All graduate students must comply with the general requirements of the Graduate School (see Admissions Regulations, Academic Regulations, and Minimum Degree Requirements), as well as the program requirements of the certificate.
- Prospective students must apply to the Graduate School and to the School of Health Studies (see School website for details). The applicant must submit an official transcript for undergraduate studies. The Graduate Record Examination (GRE) is not required.
- An applicant must have graduated with a minimum baccalaureate GPA of 2.5.

### Program Requirements

1. A total of 12 credit hours (four, 3 credit hour courses) are required for the graduate certificate in Faith and Health. The following courses are required:
  - FTHT 7000 - Practicum in Faith Health 1 **Credit Hours: (3) \***
  - FTHT 7001 - Practicum in Faith Health 2 **Credit Hours: (3) \***
  - FTHT 7002 - Comm & Whole Person Healthcare **Credit Hours: (3)**
  - FTHT 7003 - Intersection Faith and Health **Credit Hours: (3)**

#### Note:

\* The two practicum courses utilize the Experiential Learning Credit; see [www.memphis.edu/innovation/elc/experiential\\_learning.php](http://www.memphis.edu/innovation/elc/experiential_learning.php).

### Graduation Requirements

1. Students are required to complete all 12 credit hours as indicated above. A minimum GPA of 3.0 is required for successful completion of the graduate certificate program.

## Financial Analysis and Planning Graduate Certificate

### Graduate Certificate

The certificate program is designed for students interested in acquiring theoretical and practical financial knowledge and skills consistent with 21st century organizational needs and financial industry careers.

### Admission Requirements

1. Same as College and University requirements
2. The certificate program in Financial Analysis and Planning may be pursued concurrently with other graduate programs at the University of Memphis. To be approved for the program, students currently admitted to a graduate program at this University must complete an application form and submit it and a current graduate transcript to the Department of Finance, Insurance and Real Estate for review.
3. Non-degree seeking graduate students may also pursue this certificate program of study. To be approved for the program, these students must submit evidence of this non-degree-seeking graduate student status, along with the completed application form, to the Department of Finance, Insurance and Real Estate for review.
4. Admission to this certificate program is not an implied acceptance into any master's degree program in the Fogelman College of Business and Economics.

### Program Requirements

Students consider sitting for the national CFP exam should take undergraduate ACCT 3510 – Federal Income Tax as a prerequisite for taking the required five graduate courses.

Five Courses are required for the certificate from the following primarily FIR list (students should consider CFP Board's course requirements for eligibility to sit for the national CFP exam, or alternatively courses that prepares them for the international CFA exam):

- ACCT 7080 - Financial/Managerial Acct Mgrs \*\* **Credit Hours: (3)**
- FIR 7155 - Global Financial Mgmt \*\* **Credit Hours: (3)**

- FIR 7410 - Invst Thry Portfol Mgmt \*\* Credit Hours: (3)
- FIR 7840 - Python for Finance Credit Hours: (3)
- FIR 7810 - Adv Financial Mgmt Credit Hours: (3)
- FIR 7173 - Financial Analys/Certification \*\* Credit Hours: (3)
- FIR 7911 - Internship in FIR Credit Hours: (3)
- FIR 7302 - RI Estate Dvlpmt & Sustainblty Credit Hours: (3)
- FIR 7725 - Eqty Mkts:Trad/Struct Credit Hours: (3)
- FIR 8725 - Financial Mkts: Trad/Struct Credit Hours: (3)
- ACCT 7140 - Financial Statement Analysis \*\* Credit Hours: (3)
- ECON 7100 - Econ for Global Executive \*\* Credit Hours: (3)
- FIR 6011 - Retirement and Estate Planning \*\* Credit Hours: (3)
- FIR 6331 - Stock Portfolio Mgmt Credit Hours: (3)
- FIR 6550 - International Finance \*\* Credit Hours: (3)
- FIR 6610 - Cases in Financial Planning and Analysis Credit Hours: (3)
- FIR 6620 - Cases in Financial Planning Credit Hours: (3)
- FIR 6710 - Commercial Banking Credit Hours: (3)
- FIR 6720 - Mgmt Financl Institutns \*\* Credit Hours: (3)
- FIR 6721 - Fixed Income and Derivatives Credit Hours: (3)
- FIR 6730 - Financial Analysis/Certification Credit Hours: (3)
- FIR 6310 - Real Estate Law \*\* Credit Hours: (3)
- FIR 6320 - Real Estate Finance \*\* Credit Hours: (3)
- FIR 6340 - Real Estate Appraisal \*\* Credit Hours: (3)
- FIR 6350 - Real Estate Investment \*\* Credit Hours: (3)
- FIR 6870 - Risk Management \*\* Credit Hours:

## Graduation Requirements

1. To obtain the certificate, a student must complete five courses recommended for preparing CFA or CFP exam with an average grade of 3.0 (B) or higher, for a total of 15 credits.
2. In the semester of graduation, the student must submit an Intent to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to the College Director of Graduate Studies by the deadline specified by the Graduate School.

## Retention Requirements

Students receiving more than three semester letter grades below B- will be dropped out of the certificate program.

## Freight Transportation Graduate Certificate

### Graduate Certificate

The transportation profession is facing a significant decline in its workforce due to the increasing number of workers eligible for retirement. Studies indicate as much as 50% of the public sector transportation workforce is now eligible for retirement. According to US DOT "employers will need to hire 4.6 million new workers with 417,000 of these positions created as a direct result to increased demand on our transportation systems". In addition, the number of students pursuing degrees in the

transportation engineering area (primarily through civil engineering) continues to decline, and the production of graduates is not keeping pace with the demand for skilled workers in this area. The Graduate Certificate in Freight Transportation will enable individuals with science or engineering bachelor's degrees to expand their analytical, practical, and problem-solving skills in the area of freight transportation (e.g., supply chain and logistics, maritime transportation, rail transportation). The certificate will also enable them to transition and pursue advanced degrees (Master's or Ph.D.).

## Admissions

To apply for admission, students must fill out the University of Memphis online application. Applicants must have a bachelor's degree in science or engineering with a minimum GPA of 2.75. International students must have competitive TOEFL/IELTS scores. Students who are currently enrolled in a Master's or Doctoral program at the University of Memphis or other universities will be eligible for admission into the Freight Transportation Certificate Program based on the recommendation from their graduate advisor.

## Program Requirements

### Required courses:

- CIVL 7265 - Intro to Intermodal Freight **Credit Hours: (3)**
- CIVL 7262 - Freight Demand Modeling **Credit Hours: (3)**

### Electives:

- CIVL 7166 - Design Hgwy Airpt Pvmt **Credit Hours: (3)**
- CIVL 7012 - Prob Meth In Engr \*\* **Credit Hours: (3)**
- CIVL 7267 - Maritime Economics **Credit Hours: (3)**
- CIVL 7268 - Transport Network Flows **Credit Hours: (3)**
- CIVL 7263 - Intro. to Num. Opt. for Eng \*\* **Credit Hours: (3)**
- CIVL 7264 - Simulation Modeling **Credit Hours: (3)**
- CIVL 7362 - Port Planning Mgmt & Operation **Credit Hours: (3)**
- CIVL 7993 - Project & Report **Credit Hours: (3)**

## Retention Requirement

In order to continue in the program, students must maintain at least a 3.0 GPA.

## Graduation Requirements

1. Student must complete the two (2) required courses and three of the eight (8) elective courses with an average grade of B (3.0) or higher, for a total of 15 credit hours.
2. In the semester of graduation, a student must Apply to Graduate in their MyMemphis portal under the MyDegree tab as well as submit a Graduate Certificate Candidacy form to the College Director of Graduate Studies by the deadline specified by the Graduate School.

## General Business Graduate Certificate

## Graduate Certificate

This graduate certificate provides students with general knowledge about business disciplines and concepts. Students learn the basics for understanding the relationships among the different components of a business, how they interact with each other, and how business in a global context, with an emphasis on supply chain operations and business analytics.

### Admission Requirements:

Admission requirements are the same as the Fogelman College of Business and Economics and the university.

### Program Requirements:

The certificate program requires completion of 12 credit hours, as follows:

#### Required Courses (6 credits):

- SCMS 7110 - Intro to Business Analytics \*\* Credit Hours: (3)
- SCMS 7313 - Supply Chain Operations Mgmt \*\* Credit Hours: (3)

#### Electives (6 credits):

Select two of the following courses:

- ACCT 7080 - Financial/Managerial Acct Mgrs \*\* Credit Hours: (3)
- ECON 7100 - Econ for Global Executive \*\* Credit Hours: (3)
- FIR 7155 - Global Financial Mgmt \*\* Credit Hours: (3)
- MIS 7650 - Info Syst Global Enterprise \*\* Credit Hours: (3)
- MKTG 7140 - Global Strategic Marketing \*\* Credit Hours: (3)

### Graduation Requirements:

To obtain the certificate, a student must take the courses listed above, and achieve an average grade of 3.0 (B) or better across the four courses.

## Geographic Information Systems Graduate Certificate

### Graduate Certificate Program

The Graduate Certificate Program in Geographic Information Systems is open to students from departments in all colleges at the University of Memphis and colleges in the Mid South. The program is intended for students currently admitted to a graduate program at the U of M or another university or students holding an undergraduate degree.

### Program Admission

1. Students currently admitted to a graduate program at the U of M or other university or students already holding an undergraduate degree may apply for admission to the Graduate Certificate Program in Geographic Information Systems.
2. Students who have completed an undergraduate degree program but who have neither completed a graduate degree nor been admitted to a graduate program can apply to the Graduate School for admission as Non-Degree Seeking students.
3. Students must apply to both the certificate program and the graduate school. To apply, students submit:
  1. transcript of undergraduate degree program and transcripts of prior and current graduate study;
  2. two letters of recommendation;
  3. a letter describing reasons why the student is interested in pursuing a graduate certificate in the area of geographic information systems and how the program corresponds with prior experience and anticipated career plans.

## Program Requirements

### 12 Semester Credit Hours

The proposed program requires completion of 12 semester credit hours.

Nine of the 12 hours must be met by satisfactory completion of three core courses:

- ESCI 6515 - Geographic Info Science \*\* Credit Hours: (3)
- ESCI 6525 - Adv Geographic Info Sci Credit Hours: (3)
- ESCI 7998 - Capstone GIS Project Credit Hours: (3)

### Three credit hours of electives

Three credit hours of electives, selected per student's interest, with the approval of the GIS Certificate Director.

In order to continue in the program, students must maintain at least a 3.0 GPA.

## Graphic Design Graduate Certificate

### Graduate Certificate

This program will provide a Graphic Design curriculum that focuses on context/connections, communication/methodology, collaboration/process, and technology/interaction. This provides a demonstrable skill set that will stabilize and enhance opportunities for students.

### Admission Requirements:

An undergraduate degree with a major or concentration in art or design is preferred, however, applicants with Adobe software experience will be considered.

### Program Requirements:

The required courses can be taken in any sequence.

- ART 6211 - Writing/Design Process **Credit Hours: (3)**
- ART 6220 - Print Communication Design **Credit Hours: (3)**
- ART 6224 - History Graphic Design **Credit Hours: (3)**
- ART 6560 - Interactive Media Design **Credit Hours: (3)**

## Graduation Requirements:

Completion of all four required classes with a minimum GPA of 3.0.

## Health Analytics Graduate Certificate

The Certificate in Health Analytics is designed to provide students with core training in health analytics, including skills in biostatistics, predictive modeling, text mining, and advanced programming/data skills demanded by community and health care institutions today. Offered by the School of Public Health, this Certificate requires 5 courses (15 hours) of graduate coursework. Students completing this certificate program will be competitive for a wide number of positions in the health care field.

## Graduate Certificate

The Certificate in Health Analytics is designed to provide students with core training in health analytics, including skills in biostatistics, predictive modeling, text mining, and advanced programming/data skills demanded by community and health care institutions today. Offered by the School of Public Health, this Certificate requires 5 courses (15 hours) of graduate coursework. Students completing this certificate program will be competitive for a wide number of positions in the health care field.

## Admissions Requirements

Admission to the program will be based on competitive selection from the pool of applicants

- Complete admission to The University of Memphis and the School of Public Health
- A minimum of a BS/BA in a related field with a cumulative GPA of 3.0 on a 4.0 point scale.

## Program Requirements

Participants complete 15 credits hours of graduate work obtained from completing these five required courses:

- PUBH 7150 - Biostatistical Methods I \*\* **Credit Hours: (3)**
- PUBH 7152 - Biostatistical Methods II \*\* **Credit Hours: (3)**
- PUBH 7170 - Epidemiology in PUBH I\*\* **Credit Hours: (3)**
- PUBH 7190 - Adv SAS for PUBH Prof 1 **Credit Hours: (3)**
- PUBH 7104 - Large Data Sets/PUBH Research **Credit Hours: (3)**

## Electives

For students who have already taken one or more of the above courses or equivalence prior to entering the Certificate program, following is a list of 6 elective classes from which students can choose to meet the 15 credit hours requirement: (For example, if a student has already taken SAS I, the student might wish to take SAS II to further develop their analytic skills.)

Electives that students may take if required courses have already been taken:



- HADM 7109 - Health Information Systems \*\* Credit Hours: (3)
- HADM 8109 - Health Information Systems Credit Hours: (3)
- PUBH 7120 - Environmental Health I \*\* Credit Hours: (3)
- PUBH 7153 - Biostat. in Bioinformatics Credit Hours: (3)
- PUBH 8153 - Biostat. in Bioinformatics Credit Hours: (3)
- PUBH 7309 - Appl Surv Analys in Pub Hlth Credit Hours: (3)
- PUBH 8309 - Appl Surv Analys in Pub Hlth Credit Hours: (3)
- PUBH 7310 - Mixed Model Regression Analys Credit Hours: (3)
- PUBH 8310 - Mixed Model Regression Analys Credit Hours: (3)
- PUBH 7311 - Appl Categorical Data Analys Credit Hours: (3)
- PUBH 8311 - Appl Categorical Data Analys \*\* Credit Hours: (3)

## Progression/Retention Requirements

- All students in the certificate program must maintain a 3.0 graduate GPA.
- All coursework must be completed within 7 years.
- In the semester of graduation, the student must submit the Apply to Graduate Form to the Graduate School and a Graduate Certificate Candidacy form to the School's Program Coordinator and Director of Graduate Studies by the deadline specified by the Graduate School.

## Health Communication Graduate Certificate

### Graduate Certificate

This certificate is designed for professionals in healthcare or graduate students in communication, healthcare, or related disciplines. The health communication certificate program equips students with the foundational concepts and theories associated with communication in a wide variety of healthcare contexts, including patient/provider interactions, public health, health systems, and health advocacy. This series of courses will provide students with the knowledge and skills to navigate communication in a challenging healthcare environment, as well as prepare them for further graduate work if they desire.

### Admission Requirements:

Students must have a bachelor's degree with a cumulative grade point average of at least 3.0 and then apply for admission to the Graduate School with the classification of "Graduate Certificate." Students do not need to be currently enrolled at the University of Memphis to apply for this graduate certificate. All admission procedures will follow the MA program deadlines and start in the Fall semester only.

#### To apply students must submit:

- Students currently admitted to a graduate program at the University of Memphis or other university, as well as students already holding a graduate degree, may also apply for admission to the Graduate Certificate Program in Health Communication
- Students with a graduate degree or those enrolled in the graduate program must have a graduate GPA of 3.0.
- Students must apply to both the certificate program and the Graduate School. On top of regular Graduate School application, students must submit:
  - Transcripts of undergraduate degree program and any prior graduate study to Graduate Admissions.
  - One-page letter describing their intent to pursue the certificate and its relevance to their career goals.
  - If you are an international student, please review the university's additional requirements.

NOTE: Acceptance into the certificate program is not an implied acceptance into any master's degree program. If you want to continue your graduate work after completion of the certificate program, you must apply for admission to the Department of Communication and Film's Master's Program. Should you be admitted, the courses taken in the certificate program will count toward your master's degree in communication.

## Program Requirements:

The certificate requires 12 hours of course work, drawn from one required course and three additional courses chosen with the advice of a health communication faculty advisor.

### Required Course:

- COMM 7012 - Seminar Health Comm \*\* Credit Hours: (3)

### Three courses from the following:

NOTE: Other courses maybe substituted with the approval of a health communication faculty advisor depending on the applicant schedule and interests and the department's course rotation.

- COMM 6016 - Public Health Campaigns Credit Hours: (3)
- COMM 6340 - Listening Credit Hours: (3)
- COMM 6341 - Interprsnl Communicatn Credit Hours: (3)
- COMM 6375 - Interculrl Communicatn Credit Hours: (3)
- COMM 7014 - Public Health Communication Credit Hours: (3)
- COMM 7322 - Persuasion & Influence Credit Hours: (3)
- COMM 7345 - Health Literacy Credit Hours: (3)
- COMM 7354 - Topics in Rhetoric of Health, Medicine and Science Credit Hours: 3

## Graduation Requirements:

Completion of 12 credit hours taking a combination of the courses listed with a minimum 3.0 GPA across 12 credit hours.

## Retention Requirements:

Students must complete the certificate within 4 years.

## Health Systems Leadership Graduate Certificate

The Health Leadership graduate certificate provides students with training in areas critical to public health, healthcare, and community health leadership in the 21st century. The curriculum addresses topics such as population health, health policy, health services and systems organization, leadership, and change management. Students can complete the certificate part-time and online over the course of one calendar year.

## Admission Requirements

Students must have completed a bachelor's degree with a cumulative grade point average of at least 2.75 and apply for admission to the Graduate School with the classification of "Graduate Certificate." To apply students must submit:

1. Transcripts of undergraduate degree program and any prior and/or current graduate study to Graduate Admissions.
2. An application and one-page letter describing their intent to pursue the certificate and its relevance to their career goals to the Academic Services Coordinator of the School of Public Health.
3. Two (2) letters of recommendation, including at least one from a current supervisor or leader.

Applicants for whom English is not their primary language are required to meet the University's minimum required TOEFL score or the International English Language Testing System (IELTS). Acceptance into the certificate program is not an implied acceptance into any master's degree program.

## Program Requirements

Completion of four (4) courses (12 semester credit hours), as follows:

- HADM 7140 - Population Health Management \*\* Credit Hours: (3)
- HADM 7105 - Hlth Policy & Org Hlth Svs \*\* Credit Hours: (3)
- HADM 7110 - Leadershp/Org Chg in Hlth Care \*\* Credit Hours: (3)
- PUBH 7180 - Foundations of PUBH \*\* Credit Hours: (3)

## Graduation Requirements

1. The student must complete all four (4) required courses with a minimum 3.0 (B) average in all courses.
2. All courses towards certification must be completed within eight years.

In the semester of graduation, the student must submit the **Intent to Graduate Form** to the Graduate School and a **Graduate Certificate Candidacy** form to the School's Director of Graduate Studies by the deadline specified by the Graduate School.

## Retention Requirements

Students in the graduate certificate must maintain at least a 3.0 (B) average in all courses.

## Higher Education Instruction Graduate Certificate

### Graduate Certificate

This certificate program will provide graduate classes centered on quality higher education course instruction for individuals employed in higher education institution as instructors/faculty. Certificate program courses will focus on quality course instruction, course design and management, student centered learning practices, improved online course delivery, practical learning theories, and real-world opportunities for engagement

### Admission Requirements

Applicants must have a master's degree or be engaged in graduate study (masters, doctoral, etc.) in any academic field. (Students may earn this certificate while enrolled in a graduate program). Applicants should express a desire to improve higher education course instruction and resultant goals via a typed letter of intent. 3.0 masters GPA. Transcripts from previously attended institutions, Resume/CV, three letters of recommendation (No GRE requirement).

### Program Requirements

- HIAD 8510 - Overview of Adult Educ \*\* Credit Hours: (3)

- HIAD 8541 - Issues/Trends Tchg Adults \*\* Credit Hours: (3)
- LEAD 8500 - Adult Lrng/Leadership \*\* Credit Hours: (3)
- HIAD 8542 - Global/Compartv Issues Ldrshp \*\* Credit Hours: (3)
- IDT 7062 - Teaching, Learning, & Tech \*\* Credit Hours: (3) / IDT 8062 - Teaching, Learning, & Tech \*\*
- IDT 7063 - Models & Innovations of EdTech \*\* Credit Hours: (3) / IDT 8063 - Models & Innovations of EdTech \*\*

## Graduation Requirements

Maintained GPA of 3.0 while enrolled in the certificate program.

## Retention Requirements

No course grades lower than a "B". Course grades of a "C" or below must be repeated.

# Hospitality Management Specialist Graduate Certificate

## Graduate Certificate

The Hospitality Management Specialist Graduate Certificate is designed to address the increasing complexity of operating in globalized hotel, food-service or travel industries. Student enrolled in this program will gain advanced knowledge and skills that will enhance their professional qualifications in the discipline. By providing advanced knowledge and skills in hospitality management to professional in the industry, practitioners will gain the expertise in the use of tools that have the potential to increase revenues and profits in the industry. Course material focuses on the core functional areas necessary to work in the hotel industry, including operations, marketing, finance, human resources, and strategic planning.

The proposed certification will allow professionals to:

- Establish credentials by completing an approved course of study at the graduate level meeting the appropriate knowledge and skills for a hospitality management specialist.
- Complete further professional certification with organizations such as The American Hotel & Lodging Association (AH&LA).
- Complete a graduate program leading to a Master of Science in Sport and Hospitality Management degree with a concentration in Hospitality Management; or
- Complete a graduate program leading to a Master of Business Administration (MBA) degree with a concentration in Hospitality Management.

This 12-credit program is comprised of four required courses. The program can be completed in less than one year when taken part-time. **Course options may vary from semester to semester and are subject to change.**

- HPRM 7320 - Advanced Hospitality Marketing \*\* Credit Hours: (3)
- HPRM 7331 - Hospitality Services Op Mgmt \*\* Credit Hours: (3)
- HPRM 7340 - Strategic Pricing & Revenue Max Credit Hours: (3)
- HPRM 7442 - Adv Strtg Mgmt in Hosp Credit Hours: (3)

## Human Computer Interaction

The proposed certificate will provide learner's an understanding of the unique methodologies and theories needed to understand how user's utilize technology (human-computer interaction). As part of the certificate, participant's will apply theories towards design and end-user research.

## Admission Requirements

Successful completion of undergraduate program

## Program Requirements:

- COMP 7517 - Human/Comptr Interact \*\* Credit Hours: (3)  
or
- COMP 8517 - Human/Comptr Interact Credit Hours: (3)
- IDT 7070 - Instructional Design Process I \*\* Credit Hours: (3)
- IDT 7080 - Learning Experience Design \*\* Credit Hours: (3)

One of the following:

- COMP 7012 - Fndtns/Software Engr Credit Hours: (3)
- COMP 7720 - Artificial Intelligence Credit Hours: (3)
- COMP 7900 - Cyber Ethics Credit Hours: (3)
- PSYC 7222 - Psychology Human Memory Credit Hours: (3)

## Graduation Requirements:

Successful completion of 4 courses with B or better

## Retention Requirements:

Maintain active status within university

## Imaging and Signal Processing Graduate Certificate

### Graduate Certificate

#### Admission Requirements

1. Same as College and University requirements.
2. The certificate can be pursued concurrently with other graduate programs at the University.
3. Non-degree seeking applicants must submit a brief (1-2 pages) statement that describes educational and work experience in engineering, including their background in imaging and signal processing. Acceptance into the certificate program is not an implied acceptance into any master's degree program.

#### Program Requirements

Completion of 12 semester hours chosen from four of the following five courses:

- EECE 6243 - Linear Optical Systems \*\* Credit Hours: (3)
- EECE 7214 - Image Processing Credit Hours: (3)
- EECE 7215 - Digital Signal Proc \*\* Credit Hours: (3)
- EECE 7217 - Multimedia Info Process \*\* Credit Hours: (3)
- EECE 7251 - Random Signals & Noise \*\* Credit Hours: (3)

## Graduate Requirements

1. The student must complete required courses with an average grade of B (3.0) or higher, for a total of 12 credit hours
2. In the semester of graduation, the student must submit an "Apply to Graduate" form to the Graduate School and a Graduate Certificate Candidacy form to the College Director of Graduate Studies by the deadline specified by the Graduate School.

### Note:

More information can be found on the department website (<http://www.memphis.edu/eece>).

## Instructional Design and Technology - Design and Development Track, Graduate Certificate

### Online Certificate

### Admission

Students interested in receiving a Certificate in Instructional Design and Technology must be admitted to this graduate certificate program. The courses may be completed as part of a degree program with the advisor's approval.

This certificate program has two tracks: (1) K-12 Educational Technology and (2) Design and Development. Each requires 12 credit hours of online coursework as described below.

### Design and Development Requirements

The Design and Development track is for professionals interested in training, user interface design, learning experience design, and instructional design in various organizational learning settings (e.g., corporate, government, health care, higher education, and non-profit).

The following four courses are required for the Design and Development Track:

- IDT 7060 - Message Design \*\* Credit Hours: (3)
- IDT 8060 - Message Design Credit Hours: (3)
- IDT 7070 - Instructional Design Process I \*\* Credit Hours: (3)
- IDT 8070 - Instructional Design Process I Credit Hours: (3)

- IDT 7080 - Learning Experience Design \*\* Credit Hours: (3)
- IDT 8080 - Learning Experience Design Credit Hours: (3)
- IDT 7090 - Dev Interactive Lrng Envirnmnt I \*\* Credit Hours: (3)
- IDT 8090 - Dev Interactive Lrng Envirnmnt I Credit Hours: (3)

### Note:

More information about the Certificate is located at this web site: [www.memphis.edu/idt](http://www.memphis.edu/idt)

## Graduation Requirements

1. The student must complete all four required courses with a grade of an A or B for each course, for a total of 12 credit hours.
2. During the semester that students finish their certificate coursework, students must submit the Apply to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave., Memphis, TN 38152) by the deadline specified by the Graduate School.

## Instructional Design and Technology - K-12 Educational Technology Track, Graduate Certificate

### Online Certificate

### Admission

Students interested in receiving a Certificate in Instructional Design and Technology must be admitted to this graduate certificate program. The courses may be completed as part of a degree program with the advisor's approval.

This certificate program has two tracks: (1) K-12 Educational Technology and (2) Design and Development. Each requires 12 credit hours of online coursework as described below.

### K-12 Educational Technology Requirements

The K-12 Educational Technology track is for educators who want to use technology effectively in the classroom. This certificate program develops the technology competencies needed for the development, utilization, and integration of instructional computing technology in the classroom.

### Students may choose one of the following courses for the Educational Technology Track:

- IDT 7060 - Message Design \*\* Credit Hours: (3)
- IDT 8060 - Message Design Credit Hours: (3)
- IDT 7061 - Instructional Design & EdTech \*\* Credit Hours: (3)
- IDT 8061 - Instructional Design & EdTech \*\* Credit Hours: (3)

**The following three courses are required for the track:**

- IDT 7062 - Teaching, Learning, & Tech \*\* Credit Hours: (3)
- IDT 8062 - Teaching, Learning, & Tech \*\* Credit Hours: (3)
  
- IDT 7063 - Models & Innovations of EdTech \*\* Credit Hours: (3)
- IDT 8063 - Models & Innovations of EdTech \*\* Credit Hours: (3)
  
- IDT 7064 - EdTech & Instructl Development \*\* Credit Hours: (3)
- IDT 8064 - EdTech & Instructil Development \*\* Credit Hours: (3)

## Graduation Requirements

1. The student must complete all four required courses with a grade of an A or B for each course, for a total of 12 credit hours.
2. During the semester that students finish their certificate coursework, students must submit the Apply to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave., Memphis, TN 38152) by the deadline specified by the Graduate School.

## Liberal Studies Graduate Certificate

### Graduate Certificate

The Graduate Certificate in Liberal Studies is intended to present graduate background material for those seeking personal enrichment provided by liberal learning and the development of those intellectual skills necessary to lifelong learning; critical reading, scholarly writing, and the art of interpersonal communication. The program consists of four courses: (1) UNIV 7000 - Fndtns Liberal Studies \*\*; (2) UNIV 7100 - Rsrch/Intrdiscipl Study \*\*; (3) UNIV 7200 - Liberal Studies Sem \*\*; and (4) one elective course.

Foundations, Research, and Seminar are core courses in the Master of Arts in Liberal Studies degree program and thus, those who successfully complete the certificate program will be offered entry to the MALS degree program as well as the opportunity to apply those courses towards graduate degree programs in other departments in consultation with that department's graduate advisor.

### Program Admission and Prerequisites

1. Completion of an undergraduate degree with a cumulative grade point average of 2.75 on a 4.0 scale from an accredited college or university is expected. It should be noted that as applicants are selected on a competitive basis, admission is not granted to all applicants who meet only the minimum requirements.
2. Application for admission to the Graduate School. The Graduate School at the University of Memphis accepts applications via electronic submission at [www.memphis.edu/admissions/apply.php](http://www.memphis.edu/admissions/apply.php).
3. The Application Essay and Letter of Recommendation as noted at: <http://www.memphis.edu/univcoll/graduate/cls.php>.

### Program Requirements

Successful completion of the Graduate Certificate in Liberal Studies requires twelve (12) credit hours:

- UNIV 7000 - Fndtns Liberal Studies \*\* Credit Hours: (3)
- UNIV 7100 - Rsrch/Intrdiscipl Study \*\* Credit Hours: (3)



- UNIV 7200 - Liberal Studies Sem \*\* Credit Hours: (3)
- Elective (3 hours): one elective at the 6000 or 7000 level.

## Literacy Leadership and Coaching Graduate Certificate

### Graduate Certificate

The Certificate in Literacy Leadership and Coaching will provide teachers the knowledge and experiences to become outstanding literacy leaders in schools and districts. This certificate program recognizes students' ability to design curriculum, supervise teachers, and act as overall literacy leaders. The program will be taught completely online by reading faculty within the Department of ICL at the University of Memphis.

The goal of the certificate program is to 1) offer literacy teachers education beyond the state certified reading endorsement to prepare them to address the leadership needs across the region and beyond, 2) provide an accelerated program of study that will enable students to receive a Certificate in Literacy Leadership and Coaching in a timely and meaningful fashion, and 3) give official recognition of an expertise in literacy leadership to help students qualify for jobs both within and outside the United States.

### Admission

Students interested in receiving a Certificate in Literacy Leadership and Coaching must be admitted to this graduate certificate program and either be admitted to the MS degree program in Reading or have an advanced degree in a related field. The courses may be completed as part of a degree program with the advisor's approval.

### Program Requirements:

Completion of 15 semester hours distributed as follows:

Required courses:

- LITL 7000 - Literacy/English Lang Learners \*\* Credit Hours: (3)
- LITL 7540 - Lit Inst in the Elem Schl \*\* Credit Hours: (3)
- LITL 7541 - Lit Assess and Intervtn \*\* Credit Hours: (3)
- LITL 7544 - Adolscent Lit Instruc Credit Hours: (3)
- LITL 7560 - Literacy Leader and Coach \*\* Credit Hours: (3)

### Graduation Requirements:

1. Must earn state reading endorsement (pass praxis and have three years teaching experience)
2. The student must complete all five required courses with an average grade of B (3.0) or higher, for a total of 15 credit hours.
3. In the semester of graduation, the student must submit the Apply to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave, Memphis, TN 38152) by the deadline specified by the Graduate School.

## Local Government Management Graduate Certificate

## Graduate Certificate

The objectives of the certificate program are: (1) Help working professionals upgrade their knowledge of local government and theory. (2) Empower graduates of the program to succeed as effective and ethical leaders in local government administration. (3) Enhance the analytical and management capabilities of local government professionals.

## Admissions Requirements

The certificate program in Local Government Management can be pursued concurrently with other graduate programs at the university. Applicants must satisfy admission requirements of the Graduate School and receive a favorable endorsement from the public administration faculty. Admission will be based on:

1. Applicable test scores: Graduate Record Examination (GRE), Graduate Management Aptitude Test (GMAT), or Miller Analogy Test (MAT); Applicants for the MPA degree or certificate programs may be eligible for a waiver of the standardized entrance exam (GRE, GMAT or MAT). To learn more about the waiver policy please go to: [www.memphis.edu/padm/mpa/standardized-waiver](http://www.memphis.edu/padm/mpa/standardized-waiver).
2. Undergraduate grade point average;
3. Previous education and/or experience demonstrated via a resumé and two letters of reference;
4. Ability to articulate career goals and education objectives via a personal statement.

Inquiries can be directed to [mpa\\_admissions@memphis.edu](mailto:mpa_admissions@memphis.edu).

## Program Requirements

Successful completion of 15 hours of graduate credit. Students must maintain a GPA of 3.0.

### Core Local Government Management Courses, 9 hours:

- PADM 6221 - Issues/Urban Admin \*\* Credit Hours: (3)
- PADM 7602 - Public Bdgt Adm/Fin \*\* Credit Hours: (3)
- PADM 7224 - Sem Urban Problems \*\* Credit Hours: (3)

### Electives, 6 hours chosen from the following:

- PADM 7605 - Human Resources Admin \*\* Credit Hours: (3)
  - PADM 7612 - Program/Policy Evaltn Credit Hours: (3)
  - PADM 7603 - Pblc/Nonprofit Contr \*\* Credit Hours: (3)
  - PLAN 7000 - Planning the American City Credit Hours: (3)
  - PLAN 7202 - Land Use Planning Credit Hours: (3)
  - POLS 6222 - Urban Politics Credit Hours: (3)
- or
- Other elective courses chosen in consultation with an advisor

### Note:

No more than twelve credit hours of this certificate program may be applied toward the completion of the MPA degree.

## Mathematics Education Graduate Certificate

## Graduate certificate

### Admission Requirements:

Students must meet the requirements for Admission to the Graduate School

### Program Requirements

The graduate certificate program in Mathematics Education (K-8) will include five courses:

- ICL 7500 - Advanced Mathematics in K-8 Schools **Credit Hours: (3)**
- ICL 7501 - Elementary/Middle School Math Curriculum **Credit Hours: (3)**
- ICL 7508 - Sem Mathematics Educ \*\* **Credit Hours: (3)**

### Graduation Requirements:

Students must successfully pass all courses (15 credits) in the program in accordance with all Graduate School requirements.

### Retention Requirements:

Students will be required to meet all Graduate School retention requirements in order to remain in the program.

## Multi-Tier Systems of Support Graduate Certificate

### Program Requirements

- SPED 7201 - Edu Prog for Stud Learn Disab **Credit Hours: (3)** or SPED 8201 - Edu Prog for Stud Learn Disab
- SPED 7203 - Ed Prog for Stud Emot BehavDis **Credit Hours: (3)** or SPED 8203 - Ed Prog for Stud Emot BehavDis
- SPED 7206 - Special Education Law \*\* **Credit Hours: (3)** or SPED 8206 - Special Education Law
- SPED 7522 - Tiered Interventions **Credit Hours: (3)** or SPED 8522 - Tiered Interventions

## Multimedia Storytelling Graduate Certificate

The Graduate Certificate in Multimedia Storytelling offers students both practical and theoretical instruction in storytelling using multimedia technology: words, pictures, graphics, video, audio and social media. The certificate program emphasizes the technical expertise needed to create multimedia projects and the reporting and storytelling skills needed to create compelling content in today's media market.

Objectives of the program include:

- Teach students the technical skills needed to produce multimedia projects in today's media environment. Technical skills taught: writing, photography, video, design, audio and social media.
- Teach students how to create compelling content from a variety of sources, topics and fields.

## Program Admission

Prospective students must submit the following in order to be considered for admission:

- Application
- Resume
- Undergraduate transcript
- Goal statement

## Program Requirements (12 hours)

Students are required to take JRSM 7350 - Advanced Multimedia Reporting \*\* and JRSM 7510 - Information Design \*\* and then choose two of the following:

- JOUR 6150 - Sports Writing/Reporting **Credit Hours: (3)**
- JOUR 6155 - Multimedia Sports Reporting **Credit Hours: (3)**
- JOUR 6160 - Food Writing/Reporting **Credit Hours: (3)**
- JOUR 6170 - Business Reporting/Writing **Credit Hours: (3)**
- JOUR 6180 - Public Issues Writing/Reporting **Credit Hours: (3)**
- JOUR 6190 - Opinion Writing/Reporting **Credit Hours: (3)**

## Graduation Requirements

Students must complete four courses with at least a B in each course.

## Retention Requirements

Each student will meet with the JRSM graduate director for advising each semester. The graduate director will review the students' progress in the program and offer advice on how to proceed. Students are required to maintain a B average to remain in good academic standing at the university. No student will get credit for a course unless the students gets at least a B. Any course where less than a B in received will have to be taken again.

## Museum Studies Graduate Certificate

### Interdisciplinary Graduate Certificate Program

(Administered jointly by the Departments of Anthropology and Art)

## Program Admission

1. Students currently admitted to a graduate program at the U of M or another university or students holding a graduate degree may apply for admission. For students enrolled in a graduate program, a minimum GPA of 3.0 is required for

admission. In rare instances, a student who has completed an undergraduate degree program but who has not completed a graduate degree nor been admitted to a graduate program may apply and will be considered on an individual basis.

All students not currently admitted to a graduate degree program at the U of M must also apply to the Graduate School for admission as a non-degree student. In order to continue in the program, students must maintain at least a 3.0 GPA.

2. To apply, students submit:
  1. transcript of undergraduate degree program and transcripts of prior and current graduate study;
  2. three letters of recommendation; and
  3. a letter describing reasons for wishing to take a graduate certificate in the area of museum studies and how the program corresponds with prior experience and anticipated career plans.

Inquiries can be directed to Dr. Leslie Luebbers, Director of the Art Museum (lluebbrs@memphis.edu).

## Program Requirements

Six of the 18 hours will be met by completion of two core courses:

- ANTH 7661 - Museum Practices \*\* Credit Hours: (3)
- ARTH 7661 - Museum Practices \*\* Credit Hours: (3)
- ANTH 7662 - Museums & Communities \*\* Credit Hours: (3)
- ARTH 7662 - Museums & Communities \*\* Credit Hours: (3)

Six elective hours will be selected in consultation with the Admissions and Advisory Committee

Six elective hours will be selected in consultation with the Admissions and Advisory Committee. Except for unique circumstances, students in the Anthropology and Art History graduate programs must take at least three elective hours outside their major department.

Two three-hour internships are required

Two three-hour internships ( ANTH 7669 - Museum Internship \*\*/ ARTH 7669 - Museum Internship \*\*) are required. Each internship site will be chosen in consultation with the Admissions and Advisory Committee. For those students working in a museum or other appropriate community site, three of the internship hours may be replaced by a third elective course.

## Music - Artist Diploma Certificate

### Artist Diploma Program

The Artist Diploma certificate provides concentrated post-baccalaureate training for prospective professional musicians in the instrumental, voice, keyboard, and conducting areas.

### Program Admission

Admission for the program is highly competitive and limited to individuals who have demonstrated exceptional skills in performance or conducting through audition. Admission requirements can be found on this catalog's page for the Rudi E. Scheidt School of Music. Additional information can be found in the School of Music Graduate Student Handbook. For course approval, contact the Assistant Director for Graduate Studies in the School of Music, Dr. **Josef Hanson**.

Students may pursue a graduate degree at the University of Memphis after acquiring the Artist Diploma. In such cases, they must fulfill all entrance requirements for a graduate degree. Credits from the Artist Diploma may be transferred to a relevant graduate degree and are subject to the usual Graduate School time limit. Students should consult the degree program department in advance to determine which of the Artist Diploma credits are appropriate for transfer.

Students in a graduate degree program may not transfer into the Artist Diploma program. After successful completion of a graduate program, a student may apply to and audition for the Artist Diploma program. No hours from any degree will apply to the Artist Diploma.

## Program Requirements (18 hours)

The individual program of study is determined as a cooperative effort between the student and his or her advisor.

### Applied Lessons (6 hours)

Taken over a minimum of two semesters.

### Ensemble (2 hours)

### Approved Studies (9 hours)

Approved Studies satisfy courses decided in consultation with the student's advisor.

### Recital (1 hour)

- MUAP 7999 - Recital **Credit Hours:** (1-3)

## Nursing Education Graduate Certificate

### Post-Graduate Degree Certificate

The Nursing Education Certificate program provides a formal program of study for nurses already holding a graduate degree to obtain a credential allowing them to teach across various healthcare settings. The program provides content necessary to teach nursing in a specific population area. In this certificate program, students will learn about nursing and educational theories, learning strategies, curricular development, program planning and evaluation, and develop skills in different teaching methodologies.

### Program Admission

Admission to the program is based on competitive selection from the pool of applicants who meet the Loewenberg College of Nursing admission requirements.

Additional admission requirements for the Nursing Education Post-Graduate Degree Certificate Program include:

1. A graduate degree in nursing from an accredited program (NLNAC or CCNE).

2. Eligibility to practice as a Registered Nurse in Tennessee or in an approved state in which clinical assignments are completed. Appropriate licensure/authorization must be obtained during the first semester following admission to the program.
3. Overall G.P.A. of 3.0 on a 4.0 scale
4. Applicants for whom English is not their primary language are required to meet the University's minimum required TOEFL score.
5. A written document prepared by the applicant that includes a resume, a discussion of prior professional experience, future career goals, and reasons for pursuing graduate study.
6. Letters of recommendation from at least three persons familiar with the applicant's academic and/or professional background and experience in nursing practice, specifying in detail the applicant's capabilities for graduate study and for future practice as an advanced practice nurse.

## Program Requirements (12 credit hours)

- NURS 7204 - Curriculum Design & Ed Theory \*\* Credit Hours: (3)
- NURS 7205 - Evaluation Mthds in NursingEdu \*\* Credit Hours: (3)
- NURS 7207 - Nurse Educator Immersion 1 \*\* Credit Hours: (2) (120 clock hours)
- NURS 7209 - Nurse Educator Immersion 2 - Residency \*\* Credit Hours: (4) (240 clock hours)

## Retention

Retention requirements are the same as for the MSN degree. All requirements for the post-graduate degree certificate must be completed in 5 calendar years

# Nursing Executive Leadership Post-Graduate Certificate

## Graduate Certificate

The Post-Graduate Certificate in Nursing Executive Leadership provides a formal program of study for students who hold a Master of Science in Nursing degree in another specialty. The program prepares nurses for management and executive nursing roles in various healthcare settings.

## Admission Requirements

Admission to the program is based on competitive selection from the pool of applicants who meet the College of Graduate Studies admission requirements.

Additional admission requirements for the Nursing Executive Leadership Post-Graduate Certificate Program include:

1. A graduate degree in nursing from a nursing accredited program (e.g. CCNE).
2. Eligibility to practice as a Registered Nurse in Tennessee or in an approved state in which clinical assignments are completed. Appropriate licensure/authorization must be obtained during the first semester following admission to the program.
3. Overall G.P.A. of 3.0 on a 4.0 scale
4. Applicants for whom English is not their primary language are required to meet the University's minimum required TOEFL score.
5. A written document prepared by the applicant that includes a resume, a discussion of prior professional experience, future career goals, and reasons for pursuing graduate study.

- Letters of recommendation from at least three persons (a minimum of one academic) familiar with the applicant's academic and professional background and experience in nursing practice, specifying in detail the applicant's capabilities for graduate study and for future practice as an advanced practice nurse.

## Program Requirements

- NURS 7901 - Comm/Rel Bldg Nurse Exec \*\* Credit Hours: (3)
- NURS 7904 - Fin/Hum Rsrcs Patient Care \*\* Credit Hours: (3)
- NURS 7905 - Improving Patient Care Del \*\* Credit Hours: (3)
- NURS 7907 - Evidenc-Based Ldrshp Pract \*\* Credit Hours: (3)
- NURS 7908 - Healthcare Finance Practicum \*\* Credit Hours: (3)
- NURS 7909 - Nurse Executive Practicum \*\* Credit Hours: (4)
- NURS 7303 - Health Care Finance \*\* Credit Hours: (3)

## Graduation Requirements

Completion of all courses within 5 calendar years.

## Retention Requirements

- Students in the Loewenberg College of Nursing graduate program must comply with all retention standards of the University of Memphis Graduate School.
- Students must earn a grade of "B" or better in all clinical and lab courses (NURS 7102, NURS 7107, NURS 7207, NURS 7209, NURS 7307, NURS 7309, NURS 7602, NURS 7604, NURS 7606, NURS 7609, NURS 7908, NURS 7909) in order to graduate.
- Academic disqualification from the graduate nursing major will occur when the student:

fails to maintain a 3.0 GPA in graduate school.

fails to earn a grade of "B" (3.0) or better when repeating a course.

willfully misrepresents patient data or clinical practice.

willfully places any patient in physical or emotional jeopardy.

fails to maintain an active, unencumbered license to practice as a registered nurse in Tennessee or license to practice in an approved state in which clinical assignments are to be completed.

fails to disclose a felony conviction.

fails to disclose disciplinary action or diversion by any board of nursing (or equivalent).

fails to complete all degree requirements within five years of entering graduate nursing coursework.

- All requirements for the MSN degree must be completed in 5 calendar years.

## Nursing Family Nurse Practitioner Post-Graduate Certificate

### Post-Graduate Certificate



The Family Nurse Practitioner (FNP) Certificate program provides a formal program of study for graduate-prepared nurses interested in taking the national certification exam to practice as a Family Nurse Practitioner. To be eligible to take the national certification exam students must "successfully complete graduate didactic and clinical requirements of a graduate nurse practitioner program through a formal graduate-level certificate or Master's level NP program in the desired area of practice." The FNP Certificate program offers a formal program of study to meet this need for students who already have a graduate degree in nursing without requiring a second master's degree.

## Admission

Because the University seeks to provide in as much as possible a reasonably safe environment for its health career students and their patients, students may be required during the course of the program to demonstrate their physical and/or emotional fitness to meet the essential requirements of the program. Such essential requirements include freedom from communicable diseases, the ability to perform certain physical tasks, and suitable emotional fitness. Any appraisal measures used to determine such physical and/or emotional fitness will be in compliance with Section 504 of the Rehabilitation Act of 1973 and the American with Disabilities Act of 1990, so as not to discriminate against any individual on the basis of disability.

Core performance standards for admission and progression:

1. Critical thinking ability sufficient for clinical judgment.
2. Interpersonal abilities sufficient to interact with individuals, families, and groups from a variety of social, emotional, cultural, and intellectual backgrounds.
3. Communication abilities sufficient for interaction with others in verbal and written form.
4. Physical abilities sufficient to move from room to room and maneuver in small spaces.
5. Gross and fine motor abilities sufficient to provide safe and effective nursing care.
6. Auditory ability sufficient to monitor and assess health needs.
7. Visual ability sufficient for observation and assessment necessary in nursing care.
8. Tactile ability sufficient for physical assessment.

## Admission Requirements

Admission to the program will be based on competitive selection from the pool of applicants. Multiple criteria will be used when considering applicant admission including, but not limited to, letter of interest, undergraduate and graduate grade point averages, professional experience, applicant interview, and letters of recommendation.

Additional admissions requirements for the Family Nurse Practitioner Certificate Program include:

1. A graduate degree in nursing from an accredited program (NLNAC or CCNE).
2. Satisfactory completion (B or better) of the following courses at the graduate level:
  - NURS 7101 - Advanced Health Assessment \*\* - 3 semester hours
  - NURS 7102 - Advanced Health Assessment, Clinical \*\* - 1 semester hour
  - NURS 7103 - Advanced Pathophysiology \*\* - 3 semester hours
  - NURS 7104 - Advanced Pharmacology \*\* - 3 semester hours

3. Eligibility to practice as a Registered Nurse in Tennessee or in an approved state in which clinical assignments are completed. Appropriate licensure/authorization must be obtained prior to the start of the program.
4. Overall G.P.A. of 3.0 on a 4.0 scale
5. Applicants for whom English is not their primary language are required to meet the University's minimum required TOEFL score.
6. A written document prepared by the applicant that includes a resume, a discussion of prior professional experience, future career goals, and reasons for pursuing graduate study.
7. Letters of recommendation from at least three persons familiar with the applicant's academic and professional background and experience in nursing practice, specifying in detail the applicant's capabilities for graduate study and for future practice as an advanced practice nurse.
8. Students admitted to MSN program or post graduate certificate programs must have and maintain while in the program:
  - An unrestricted license to practice as a registered nurse in Tennessee or license to practice in an approved state in which clinical assignments are to be completed.
  - Current CPR certification.
  - Evidence of hepatitis B; measles, mumps, rubella (MMR); polio; tetanus, diphtheria, pertussis (Tdap), varicella, and COVID vaccinations and/or titers if available.
  - Freedom from tuberculosis as evidenced by a negative PPD or health provider examination.
  - Annual flu vaccination, unless medically contraindicated.

## Post-Graduate Certificate Program Progression and Retention Requirements

1. Students in the Loewenberg College of Nursing graduate program must comply with all retention standards of the University of Memphis Graduate School.
2. Students must earn a grade of "B" or better in all clinical and lab courses:
  - NURS 7102
  - NURS 7107
  - NURS 7602
  - NURS 7604
  - NURS 7606
  - NURS 7609
  - NURS 7207
  - NURS 7209
  - NURS 7307
  - NURS 7309
  - NURS 7908
  - NURS 7909
3. Academic disqualification from the graduate nursing major will occur when the student:

- fails to maintain a 3.0 GPA in graduate school.
- fails to earn a grade of "B" (3.0) or better when repeating a course.
- willfully misrepresents patient data or clinical practice.
- willfully places any patient in physical or emotional jeopardy.
- fails to maintain an active, unencumbered license to practice as a registered nurse in Tennessee or license to practice in an approved state in which clinical assignments are to be completed.
- fails to disclose a felony conviction.
- fails to disclose disciplinary action or diversion by any board of nursing (or equivalent).
- fails to complete all degree requirements within five years of entering graduate nursing coursework.
- All requirements for the Post-Graduate Certificate must be completed within 5 calendar years.

## Family Nurse Practitioner Post-Graduate Certificate (23 credit hours)

The Post-Graduate Certificate with a concentration in Advanced Practice Nursing (Family Nurse Practitioner) prepares advanced practice nurses to deliver primary health care to all ages; individuals and families throughout the lifespan and across the health continuum. Among their course of study, students will be provided with knowledge and clinical skills necessary for health promotion, disease prevention, assessment, and management of common acute and chronic illnesses.

## Family Nurse Practitioner Post-Graduate Certificate Required Courses

- NURS 7107 - Differential Diagnosis Across the Lifespan **Credit Hours: 2** (30 clock hours)
- NURS 7601 - Family Nurse Practnr I \*\* **Credit Hours: (3)**
- NURS 7602 - Family Nurs Prac I/Clin \*\* **Credit Hours: (2)** (120 clock hours)
- NURS 7603 - Family Nurs Practnr II \*\* **Credit Hours: (3)**
- NURS 7604 - Family Nurs Pract II/CLN \*\* **Credit Hours: (4)** (240 clock hours)
- NURS 7605 - Family Nurs Pract III \*\* **Credit Hours: (3)**
- NURS 7606 - Family Nurs Prac III Cln \*\* **Credit Hours: (2)** (120 clock hours)
- NURS 7609 - FNP Practicum \*\* **Credit Hours: (4)** (240 clock hours)

## Family Nurse Practitioner Concentration Progression and Retention Requirements

1. Family Nurse Practitioner students must complete a minimum of 750 clock hours to meet the academic and practicum requirements for national certification (NTF Criteria, 2021).
2. In accordance with the policy set forth by the University of Memphis Graduate School, before being recommended for graduation, every candidate for the master's degree and post-graduate certificate, who does not write a thesis is required to pass a final comprehensive/competency examination.

### **Family Nurse Practitioner Concentration Re-Entry after Disqualification:**

Following academic disqualification, students are eligible to reapply to the FNP program after 3 years or to the FNP Post-Graduate Certificate after 1 year. Minimum course requirements following readmission include the completion of FNP I, II, III, Residency and corequisite courses. All MSN progression, retention, and graduation policies apply.

## Organic Chemistry Graduate Certificate

### Admission Requirements

Students will have a U.S. equivalent bachelor's degree with a satisfactory record of undergraduate coursework in chemistry or related areas. GRE is not required.

### Program Requirements

- CHEM 6311 - Intermediate Organic Chemistry **Credit Hours: (3)**
- CHEM 6416 - Molecular Spectroscopy **Credit Hours: (3)**
- CHEM 7311 - Adv Organic Chemistry **Credit Hours: (3)**
- CHEM 7312 - Synthetic Organic Chem **Credit Hours: (3)**

### Graduation Requirements

12 credit hours with a cumulative GPA of at least 3.00.

### Retention Requirements

The graduate certificate program will follow the program retention plans outlined in the Chemistry Graduate Handbook.

## Philanthropy and Nonprofit Leadership Graduate Certificate

### Graduate Certificate

The Certificate in Philanthropy and Nonprofit Leadership is designed to meet the needs of graduate students, employees and volunteers looking for advanced study in the theory and practice of nonprofit administration. Ideal for nonprofit professionals, community volunteer leaders and active philanthropists, the Certificate provides knowledge and skills to help strengthen the leadership capacity of nonprofit organizations and promote ethical and effective nonprofit administrative practice. The Certificate requires 15 hours of graduate coursework, available in both on-campus and online formats.

### Admission Requirements:

The Certificate in Philanthropy and Nonprofit Leadership can be pursued concurrently with other graduate programs at the university. In particular, students currently admitted and in good standing in a graduate program at the University of Memphis can enroll in this certificate program.

Applicants must satisfy admission requirements of the Graduate School and receive favorable endorsement from the public administration faculty. Admission will be based on:

1. Applicable test scores (Graduate Record Examination [GRE], Graduate Management Aptitude Test [GMAT], or Miller Analogy Test [MAT]);
2. Undergraduate grade point average;
3. Previous education and/or experience demonstrated via a resumé and two letters of reference;
4. Ability to articulate career goals and education objectives via a personal statement.

Inquiries can be directed to [mpa\\_admissions@memphis.edu](mailto:mpa_admissions@memphis.edu).

## Program Requirements:

Successful completion of 15 hours of graduate credit. Students must maintain a GPA of 3.0.

Twelve of the 15 hours must be met by satisfactory completion of four core courses

- PADM 7641 - Thry/Prac Nonprofit Adm \*\* Credit Hours: (3)
- PADM 7605 - Human Resources Admin \*\* Credit Hours: (3)
- PADM 7642 - Res Dev Nonprofit Org \*\* Credit Hours: (3)
- PADM 7643 - Semn Nonprofit Adm&Philanth \*\* Credit Hours: (3)

## Other Requirements

1. Elective courses will be selected with the student and their advisor.
2. In order to continue in the program, students must maintain at least a 3.0 Graduate GPA.

## Graduation Requirements:

To obtain the certificate a student must complete five of the above-mentioned courses (four major courses and one elective course), with an average grade of 3.0 (B) or higher, for a total of fifteen credits.

## Play Therapy Graduate Certificate

The purpose of the Interprofessional Graduate Certificate in Play Therapy is to increase the number of student trainees and community-based practitioners who are equipped to provide play therapy services, and capable of pursuing the credential of Register Play Therapist (RPT) in the Memphis and greater Midsouth region. There is a large need for interventions and services for children, youth, and families that are developmentally appropriate and effective for their identified needs. Play Therapy is a preferred method of intervention for much of the work done with infants, children, and adolescents in mental and behavioral health treatment. The Memphis and Mid-South area is currently very anemic in the number of registered play therapists (RPT) available for service delivery. Based on the National Association for Play Therapy credentialing website, there are only in the Memphis region.

## Admission Requirements:

The certificate is designed to be completed in conjunction with a graduate degree in Social Work, Counseling, Clinical Mental Health, Psychology, or post-master's degree. The certificate program is housed in the University of Memphis School Social Work and can be pursued concurrently with the Master of Social Work program (or other graduate programs mentioned above) or after completion of a graduate degree in a social-behavioral science or closely related field. Concurrent or prior enrollment in an accredited program is required. Students may fulfill admissions requirements in one of the following two ways.

Admission into the Master of Social Work/ or other graduate programs (CEPR, Psychology, Clinical Mental Health, School Psychology, or Counseling) at the University of Memphis.

Proof of successful completion of a master's degree in one of the following areas from accredited programs: Social Work, Counseling, Clinical Mental Health, or School Psychology programs.

- Admission into the University of Memphis at the graduate level in one of the above disciplines.

## Program Requirements:

### Interprofessional Graduate Certificate in Play Therapy – 12 hours

Must Complete 12 credit hours from those listed below:

#### Core Course – The following courses are required:

- SWRK 7041 - Play Therapy \*\* Credit Hours: (3)
- SWRK 7702 - Advanced Play Therapy- Group Skills and Assessment Credit Hours: 3
- SWRK 7701 - Play Therapy and Expressive Arts Credit Hours: 3
- SWRK 6937 - School Social Work \*\* Credit Hours: (3)

## Graduation Requirements:

1. Students must complete all four required courses with an average grade of B (3.0) or higher for a total of 12 credit hours.
2. Students may earn no more than 3 credit hours of C+, C, or C- grades.

## Retention Requirements:

All students are required to maintain a cumulative GPA of at least 3.00. Should the student's cumulative GPA fall below that mark, a period of one semester will be allowed to correct the deficiency. At the discretion of the chair, the director of graduate studies in the student's college, and the Assistant Vice Provost for Graduate Studies, this period may be extended one additional semester. No more than 6 hours of "C-," "C" or "C+" will be applied toward meeting graduate degree requirements. "D+," "D," and "F" will not be applied towards the graduate degree requirements. All students who fall below a GPA of 3.0 for one semester, and all students who earn a grade of "D+," "D," or "F" will be automatically referred to meet with the program retention committee the following semester.

## Population Health Graduate Certificate

The Graduate Certificate in Population Health offers focused academic training for public health practitioners and other healthcare leaders who are interested in improving health outcomes in the community. The certificate can be completed in two semesters (either online or in-class). Once completed, students are eligible to take the Certified in Public Health (CPH) exam. Credit earned for the courses may be applied to the MPH degree

## Graduate Certificate

### Admissions Requirements:

Students must have completed a bachelor's degree with a cumulative grade point average of at least 3.0 and apply for admission to the Graduate School with the classification of "Graduate Certificate." To apply students must submit:

1. Transcripts of undergraduate degree program and any prior graduate study to Graduate Admissions.
2. An application and one-page letter describing their intent to pursue the certificate and its relevance to their career goals to the Academic Services Coordinator of the School of Public Health.

3. Applicants for whom English is not their primary language are required to meet the University's minimum required TOEFL score or the International English Language Testing System (IELTS) score.
4. Acceptance into the certificate program is not an implied acceptance into any master's degree program.

## Program Requirements:

Completion of six courses (18 semester credit hours), as follows:

- PUBH 7150 - Biostatistical Methods I \*\* Credit Hours: (3)
- PUBH 7170 - Epidemiology in PUBH I\*\* Credit Hours: (3)
- HADM 7105 - Hlth Policy & Org Hlth Svs \*\* Credit Hours: (3)
- PUBH 7160 - Soc/Behav Science Principles \*\* Credit Hours: (3)
- PUBH 7120 - Environmental Health I \*\* Credit Hours: (3)
- PUBH 7180 - Foundations of PUBH \*\* Credit Hours: (3)

## Graduation Requirements:

The student must complete all five required courses with a cumulative GPA of 3.0 or better. Only grades of B or better will be accepted for transfer into the MPH Program.

All courses towards certification must be completed within eight years.

In the semester of graduation, the student must submit the Apply to Graduate Form to the Graduate School and a Graduate Certificate Candidacy form to the School's Program Coordinator and Director of Graduate Studies by the deadline specified by the Graduate School.

## Population Health Informatics Graduate Certificate

With the rapid pace of technological advancements, public health professions require a core set of informatics skills. Population health informatics tools and technologies are rapidly enhancing the capacity to translate growing population data into meaningful information that can inform actionable insights. Expertise in population health informatics is critical in supporting the activities of public health agencies toward building and sustaining information capabilities that meet evolving population health needs.

## Admission Requirements:

Applications for admission to the program will be consistent with the school's graduate admissions. Eligible students will submit applications via SOPHAS Express, a centralized online application system for schools and programs of public health. Other application requirements include:

- - SOPHAS express online application fee
  - Transcripts of all institutions attended (with a minimum GPA of 3.0)
  - A personal statement/statement of purpose (recommended length is 500 words)
  - Two letters of recommendation
  - A resume/CV
  - TOEFL scores are required if language of instruction for prior degrees was not English
    - Paper-based test: 550
    - Computer administered test: 233
    - Internet-based test: 60 (reading score, writing score, and listening score)
  - Transcript evaluation from WES or ECE for foreign transcripts

## Required Courses:

- COMP 6001 - Intro to Python Programming **Credit Hours: (3)**
- COMP 7115 - Database Systems **Credit Hours: (3)**
- PUBH 7472 - Digital Health Interventions and Evaluations **Credit Hours: 3**
- PUBH 7474 - Principles of Population Health Informatics **Credit Hours: 3**

## Choose one of the following\*

- COMP 7118 - Data Mining \*\* **Credit Hours: (3)**
- COMP 7517 - Human/Comptr Interact \*\* **Credit Hours: (3)**
- COMP 7720 - Artificial Intelligence **Credit Hours: (3)**
- PUBH 7470 - Community and Population Health Dashboards **Credit Hours: 3**

\* If a student has sufficient previous work experience in health informatics, they may work with their academic advisors to submit a portfolio to obtain experiential learning credit towards their certificate.

## Graduation Requirements:

Five graduate-level courses (15 credits) are required for program completion. The required courses address the following competencies in population health informatics:

- Assess stakeholder data, information, and knowledge needs
- Manage and direct health informatics planning for projects related to public health and information technology
- Apply informatics standards appropriately and contribute to standards development efforts
- Design, develop, and implement user-centered population health information systems effectively
- Establish frameworks for evaluating the implementation process of information systems and applications, and make recommendations to improve user satisfaction and outcomes
- Recommend strategies and solutions that integrate informatics knowledge within organizations and communities and ensure confidentiality, security, and integrity

## Retention Requirements:

The school has a robust advisement plan where each student will have a faculty advisor. There will be an orientation at the start of the program and once a semester we will have meeting with all the students in the mid semester to assess feedback on how things are going. Students must earn a grade of B (3.0) or higher in all required courses. Grades of "D" and "F" will not apply toward any graduate degree but will be computed in the GPA. No more than 7 hours of "C-", "C," or "C+" will be applied towards meeting degree requirements. The graduate certificate program will adhere to Graduate School policy regarding course grades and repetition of courses.

## Professional Real Estate Graduate Certificate

The *Professional Real Estate Graduate Certificate* prepares students and working professionals training for careers in real estate and related industries without the need of obtaining a graduate degree in real estate. This program prepares students for careers in mortgage banking, real estate development, real estate investment, real estate valuation and assessment, government, as well as real estate sales and property management.



## Admission Requirements:

1. Same as the college and university requirements.
2. The certificate can be pursued concurrently with other graduate programs at the University.
3. Students who have completed an undergraduate degree program but who have neither completed a graduate degree nor been admitted to a graduate program can apply to the Graduate School for admission as Non-Degree Seeking students. GMAT and GRE scores are not required. However, acceptance into the certificate program is not an implied acceptance into any master's degree program.

## Program Requirements: (18 hours)

The Professional Graduate Real Estate Certificate requires completion of 18 semester hours, as follows:

### Six hours (two courses):

- FIR 7301 - Contemp Rles Thry/Prac \*\* Credit Hours: (3)
- FIR 7155 - Global Financial Mgmt \*\* Credit Hours: (3)

### Twelve additional hours (four classes) from the following group:

- FIR 6310 - Real Estate Law \*\* Credit Hours: (3)
- FIR 6320 - Real Estate Finance \*\* Credit Hours: (3)
- FIR 6330 - Principles of Property Management Credit Hours: 3
- FIR 6340 - Real Estate Appraisal \*\* Credit Hours: (3)
- FIR 6350 - Real Estate Investment \*\* Credit Hours: (3)

## Graduation Requirements:

1. To obtain the certificate, a student must complete six courses, with two from the first group of courses and four courses selected from the second group of courses, for a total of 18 credit hours.
2. A minimum grade of B is required for each of the six courses.
3. In the semester of graduation, the student must submit an Apply to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to the College Director of Graduate Studies by the deadline specified by the Graduate School.

## Retention Requirements:

Maintain a minimum of a B average in the required courses.

## Program Requirements

Completion of 12 semester hours distributed as follows:

## Program Requirements

Completion of 12 semester hours distributed as follows:

## Qualitative Studies in Education Graduate Certificate

### Graduate Certificate

Program Objectives:

1. The certificate will provide students with an understanding of the epistemological and theoretical groundings associated with qualitative research.
2. The certificate is intended to provide students with knowledge and experience in various qualitative methodologies and methods.
3. The certificate will assist students in constructing their own qualitative research projects following from epistemology - > theory -> methodology -> method -> analysis/interpretation -> representations -> conclusions.
4. The certificate will increase critical thinking skills in relation to general qualitative scholarship, including prevailing theories, ethical considerations, and emerging perspectives.
5. The certificate will provide space for students to practice different methodologies, methods, and types of representation, including both traditional and creative analytic practices.
6. The certificate program will prepare students to be effective reviewers and critical consumers of qualitative presentations, papers, and journals.
7. The certificate program will provide students with opportunities to practice graduate level instruction so that they will enter the job market with concrete teaching experience.

### Program Admissions

Students who are currently enrolled in a Doctoral program at the University of Memphis or other universities will be eligible for rolling admission application.

To apply to the Graduate Certificate Program in Qualitative Studies in Educational Research, students must fill out the University of Memphis online application. They must also submit the following documents to the qualitative certificate coordinator:

1. a 2-3 page personal essay about their research interests, prior preparation and experience related to the objectives of the program, and their long--range career/professional plans
2. a letter of recommendation from their major professor/committee member supporting the certificate's requirements of a fully qualitative dissertation

Doctoral\* students in good standing will be admitted to the Qualitative Studies in Educational Research Certificate Program on the recommendation of the student's major professor/committee member and subject to a successful review of application materials by the qualitative methodologists in the Educational Research program in the School of Education, Health and Human Sciences. The qualitative methodologists, with consideration of all materials, will make final decisions regarding student acceptance to the program.

\*Qualified Master's students are eligible based on advisor's recommendation.

### Program Requirements

The certificate requires 12 semester hours of credit. All students must complete 9 hours of core courses and 3 hours of an elective. For students with substantial proof of scheduling issues, there is the option to make up credits through a 1--3 hour directed readings with the qualitative methodologists or approved qualitative faculty.

Required core courses (9 credits):

- EDPR 7561 - Qualitative Mthds Educ \*\* Credit Hours: (3)
- EDPR 8561 - Qualitative Mthds Educ \*\* Credit Hours: (3)
- EDPR 7562 - Designing Qualitative Research \*\* Credit Hours: (3)
- EDPR 8562 - Designing Qualitative Research \*\* Credit Hours: (3)
- EDPR 7565 - Qual Methods and Analysis \*\* Credit Hours: (3)
- EDPR 8565 - Qual Methods and Analysis \*\* Credit Hours: (3)

### Example Electives (3 credits unless otherwise noted):

We recognize that there are many courses across campus that can enrich our elective selection. However, due to extensive possibilities we cannot list all current and future "potential" electives. Therefore, if a student feels that a course outside of EDPR is appropriate as an elective, we ask that the student fill out the petition for elective form to be reviewed and approved by the qualitative coordinator.

- EDPR 7563 - Theoretical Frameworks in Qual \*\* Credit Hours: (3)
- EDPR 8563 - Theoretical Frameworks in Qual \*\* Credit Hours: (3)
- EDPR 7566 - Writing Qualitative Research Credit Hours: (3) (Week--long Summer Retreat)
- EDPR 8566 - Writing Qualitative Research Credit Hours: (3) (Week--long Summer Retreat)
- EDPR 8008 - Directed Readings Credit Hours: (1-3)
- EDPR 8081 - Supervised Research Credit Hours: (1-6)
- ANTH 7075 - Methods In Anthropology Credit Hours: (3)
- ANTH 8075 - Methods In Anthropology Credit Hours: (4)
- ANTH 7076 - Anthropology Writing/Analysis Credit Hours: (3)
- ANTH 8076 - Anth Data Analysis Credit Hours: (4)
- SOCI 7320 - Sem Meth Soc Res Credit Hours: (3)
- SOCI 8320 - Sem Meth Soc Res Credit Hours: (3)
- SOCI 7325 - Sem Qualitative Resrch Credit Hours: (3)
- SOCI 8325 - Sem Qualitative Resrch Credit Hours: (3)
- COMM 7332 - Topics in Comm Methods Credit Hours: (3) : Advanced Qualitative Research Methods
- COMM 8332 - Topics in Comm Methods Credit Hours: (3) : Advanced Qualitative Research Methods
- COMM 7434 - Qual Research Methods Credit Hours: (3)
- COMM 8434 - Qual Research Methods Credit Hours: (3)
- PSYC 7312 - Qualitative Resrch/Psyc Credit Hours: (3)
- PSYC 8312 - Qualitative Resrch/Psyc Credit Hours: (3)

### Graduate Requirements

In order to graduate with the certificate, students must:

1. complete all Certificate Program course requirements with a B or above average
2. complete a fully qualitative dissertation
3. have a qualitative methodologist sit on their dissertation committee
4. submit the Certificate in Qualitative Studies in Educational Research Completion Form online
5. submit appropriate certificate completion form from the University of Memphis graduate school for program coordinator's signature

## Quantitative Studies in Educational Research Graduate Certificate

### Graduate Certificate

#### Admission

Admission to the program will be based on competitive selection from the pool of applicants

- Complete admission to The University of Memphis and the College of Education, Health and Human Sciences
- Have a minimum score of (250 computer based or 100 Internet based) on the TOEFL (for students for whom English is a second language).
- A minimum of a BS/BA in a related field with a cumulative GPA of 3.0 on a 4.0 point scale.

#### Program Requirements

##### Prerequisites:

- EDPR 7541 - Stat Meth App Ed I \*\* Credit Hours: (3) or equivalent
- EDPR 8541 - Stat Meth App Ed I \*\* Credit Hours: (3) or equivalent
- EDPR 7521 - Introduction to Research Design and Methodology \*\* Credit Hours: (3) or equivalent

Participants complete 15 credits hours of graduate work. Six (6) credits are obtained from completing:

- EDPR 7542 - Statistical Methods Applied to Education II Credit Hours: (3)
- EDPR 8542 - Statistical Methods Applied to Education II Credit Hours: (3)
- EDPR 7511 - Intro Ed and Psych Measurement \*\* Credit Hours: 3
- EDPR 8511 - Intro Ed and Psych Measurement \*\* Credit Hours: 3

And nine (9) credits are selected from:

- EDPR 8549 - Multivariate Methods Credit Hours: (3)
- EDPR 8544 - SEM in EDU/Behav Research Credit Hours: (3)

- EDPR 7531 - Intro Modern Stat Packages **Credit Hours: 3**
- EDPR 8531 - Intro Modern Stat Packages **Credit Hours: 3**
- EDPR 7512 - Psychomet Thry/Ed Appl **Credit Hours: (3)**
- EDPR 8512 - Psychomet Thry/Ed Appl **Credit Hours: (3)**

## Progression/Retention

- All students in the certification program must maintain a 3.0 graduate GPA.
- A cumulative graduate GPA of 3.0 or better is required for certification.
- All courses towards certification must be completed within 3 years.

## School Counseling Graduate Certificate

The University of Memphis's Certificate in School Counseling is intended for those individuals who have obtained a graduate degree in counseling from a program accredited by The Council for the Accreditation of Counseling and Related Educational Programs (CACREP). The program goal is to complete the requirements to obtain Tennessee Licensure as a School Counselor.

## Admission Requirements

1. Hold a graduate degree in counseling from a program that was accredited by CACREP at the time of graduation;
2. Official undergraduate and graduate transcripts of all academic work completed;
3. Submit a Graduate Record Exam (GRE) score if graduate GPA is below 3.5 (strongly recommended);
4. Complete a program admission application including goals essay;
5. Provide three letters of academic and/or professional reference; and
6. Complete an interview with the school counseling coordinator.

## Program Requirements

Total Credit Hours: 15 minimum (18 if special education/disability course needed)

The school counseling coordinator will complete a transcript review to ensure that all requirements for licensure have been met; therefore, courses in addition to the following may be required.

- COUN 7640 - Principles Schl Couns **Credit Hours: (3)**
- COUN 7542 - Child Counseling, Consultation and Intervention in Schools **Credit Hours: (3)**
- COUN 7826 - Schl Coun to Close Achvmnt Gap \*\* **Credit Hours: (3)**
- SPED 7000 - Intro Excpntional Learnr \*\* **Credit Hours: (3)**  
(if special education/disability course not taken in undergraduate or graduate program)
- COUN 7660 - School Counseling Internship **Credit Hours: 4-6**  
Students enrolled in full-time internship (600 hours) will enroll in 6 credit hours. Students enrolled in part-time internship (300 hours) will enroll in 4 credit hours for two semesters. Students without one-year minimum teaching experience will need to complete an additional 25 hours observing the school environment.

## School Library Information Specialist Graduate Certificate

### Graduate Certificate

The purpose of the Graduate Certificate for School Library Information Specialists is to provide practical training to individuals who are presently teaching or are interested in obtaining teacher licensure with a specialization as a School Library Information Specialist (TN DOE endorsement for Library Information Specialist PreK-12 - 473).

## Program Admission

Students wanting to earn the Graduate Certificate for School Library Information Specialists must have an earned Master's degree and apply to be accepted in this graduate certificate program. Applicants must also hold a current teaching license or be in the process of obtaining teacher licensure. The courses may be completed as part of a degree program with the SLIS program coordinator and graduate advisor's approval.

## Program Requirements

A total of twenty-one (21) credit hours are required to complete this program.

- ICL 7132 - Catalog/Classification \*\* Credit Hours: (3)
- ICL 7133 - School Library Admin \*\* Credit Hours: (3)
- ICL 7134 - Internet in the School Library \*\* Credit Hours: (3)
- ICL 7301 - Literature in PreK-12 School \*\* Credit Hours: (3)
- ICL 7730 - Found Librarianship \*\* Credit Hours: (3)
- ICL 7731 - Intro To Bibliography \*\* Credit Hours: (3)
- ICL 7800 - Adv Clinical Practicum \*\* Credit Hours: (3-9)

## Graduation Requirements

1. The student must complete all seven required courses with a Grade Point Average (GPA) of 3.0 or higher, for a total of 21 credit hours.
2. In the semester of the advanced clinical practicum, the student must submit a Graduate Certificate Candidacy form to the COE Graduate Analyst in Ball Hall 215 (3798 Walker Ave., Memphis, TN 38152) by the deadline specified by the Graduate School.

## School Social Work Graduate Certificate

The Graduate Certificate in School Social Work may be used by current MSW students or MSW graduates to obtain licensure as a School Social Worker. Students seeking licensure in the State of Tennessee should contact the Department about specific state requirements including test scores. Students seeking licensure in other states should contact that state for specific requirements before selecting courses.

## Admission Requirements

The certificate program in School Social Work can be pursued concurrently with the Master of Social Work program or after completion of the Master of Social Work. Concurrent or prior enrollment in an accredited Master of Social Work program is required. Students may fulfill admissions requirements in one of the following two ways.

1. Admission into the Master of Social Work at the University of Memphis.
2. Completion of the Master of Social Work at any university accredited by the Council on Social Work Education (CSWE).

## Program Requirements

Completion of 12 semester hours distributed as follows:

- SWRK 6937 - School Social Work \*\* Credit Hours: (3)

Completion of one of the following two courses:

- SPED 7000 - Intro Excpntional Learnr \*\* Credit Hours: (3)
- SPED 7517 - Func Anlys/Treat Prob Behv Credit Hours: (3)

Completion of 6 semester hours in an approved school social work setting:

- SWRK 7051 - Field Placement I Credit Hours: (3)  
and
- SWRK 7052 - Field Placement II Credit Hours: (3)  
OR
- SWRK 7053 - Field Placement III \*\* Credit Hours: (3)  
and
- SWRK 7054 - Field Placement IV \*\* Credit Hours: (3)  
OR
- ELC 7115 - Experiential Learning Credit Credit Hours: (1)

**NOTE:** The Council on Social Work Education (CSWE) stipulates that students in the Master of Social Work program may not receive credit for work or life experience. Due to this policy, ELC 7115 may not be completed by students currently enrolled in the MSW program. Under no circumstances may students attempt to substitute ELC 7115 for SWRK 7051, SWRK 7052, SWRK 7053, or SWRK 7054 or any other course in the MSW degree program. ELC 7115 may only be used by certificate students who have completed the MSW degree.

## Retention Requirements

Retention requirements are the same as those in the Master of Social Work Program.

## Graduation Requirements

1. Students must complete all four required courses with an average grade of B (3.0) or higher for a total of 12 credit hours.
2. Students may earn no more than 3 credit hours of C+, C, or C- grades.

## Secondary Education Graduate Certificate

The graduate certificate program is proposed as the post-baccalaureate component of an accelerated teacher licensure program. The five courses will be offered to complete the requirements for a license in a Secondary Education subject (e.g., English, History, Mathematics, Biology, Chemistry, etc.). Students enrolling in the certificate must have completed the courses in the K-12 Education Minor as part of their undergraduate program of study. This pathway to licensure has been approved by the Tennessee Department of Education

## Admission Requirements

Students must have successfully completed the following courses as required in the K-12 Education Minor:

- CL 3000 Principles of Teaching
- EDPR 3302 Child/Adolescent Development
- ICL 3333 Student Assessment/Instructional Decision Making
- ICL 4001 Teaching/Diverse Environment
- IDT 3600 Technology in Education
- SPED 2000 Foundations for Exceptional Learners

## Program Requirements:

- EDPR 7521 - Introduction to Research Design and Methodology \*\* Credit Hours: (3)
- ICL 7168 - Semnr Secondary Educ Credit Hours: (3)  
or
- ICL 7303 - Eng/Lan Comp Secnd Schl \*\* Credit Hours: (3)  
or
- ICL 7502 - Teaching Mathematics Middle/Secondary Schools \*\* Credit Hours: (3)  
or
- ICL 7602 - Tchng Sci Scndry Schl \*\* Credit Hours: (3)  
or
- ICL 7652 - Tchng Soc Std Mid/Sec \*\* Credit Hours: (3)
- ICL 7993 - Professional Seminar \*\* Credit Hours: (3)
- LITL 7545 - Tchng Lit Subject Areas \*\* Credit Hours: (2)

## Graduation Requirements:

In order to graduate with the certificate, students must complete all five required courses with an overall GPA of 3.0 and no grades lower than C.

Additional requirements must be met in order to become eligible for the Tennessee Professional Teacher license.

## Retention Requirements:

Students must maintain an overall GPA of 3.0 in all graduate certificate coursework, with no grades lower than C.

## Social Media Analysis and Strategy Graduate Certificate

The Graduate Certificate in Social Media Analysis and Strategy offers students skills and knowledge to broaden their use of social media in a professional setting, including using it to attract readers, clients and customers. The certificate emphasizes knowledge of how to use social media, how to engage the public, and how to analyze the information social media provides in order to improve performance and understanding.

Objectives of the program include:

- To prepare students as professionals in advertising, public relations and journalism with the knowledge and current theories of how social media can be used to engage the public.
- To equip students with the skills needed to use social media to do tasks such as enhance public perception of a product, increase marketability of a business and heighten brand awareness.
- To certify students in multiple areas of social media analytics, such as HootSuite, Meltwater, Google AdWords, Google Digital Garage, and others.



## Program Admission

Prospective students must submit the following in order to be considered for admission:

- Application
- Resume
- Undergraduate Transcript
- Goal Statement

## Program Requirements (12 hours)

The Graduate Certificate in Social Media Analysis and Strategy requires 12 hours. Students are required to take JRSM 7330 Advanced Social Media and Community Engagement (3 hours) and JRSM 7412 Social Media Analytics and Evaluation. Then students would choose two of the following courses (3 hours each):

- JRSM 7100 - Entrepreneurial Media \*\* Credit Hours: (3)
- JRSM 7410 - Advanced Crisis Communication \*\* Credit Hours: (3)
- JRSM 7414 - Audience Analysis&Segmentation Credit Hours: (3)
- JRSM 7416 - Global Strategic Communication \*\* Credit Hours: (3)
- JRSM 7422 - Writing for Strategic Media \*\* Credit Hours: (3)

## Graduation Requirements

Student must complete four courses with at least a B in each course.

## Retention Requirements

Each student will meet with the JRSM graduate director for advising each semester. The graduate director will review the students' progress in the program and offer advice on how to proceed. Students are required to maintain a B average to remain in good academic standing at the university. No student will get credit for a course unless the students gets at least a B. Any course where less than a B in received will have to be taken again.

## Software Testing Graduate Certificate

### Graduate Certificate

Software testing is a critical discipline as organizations increasingly rely on information systems that are becoming increasingly more complex. This certificate prepares students to both manage and participate in testing at all stages of the software development process. The topics and techniques are applicable to testing all types of software.

### Admissions Requirements

1. Same as College and University requirements.
2. The certificate can be pursued concurrently with other graduate programs at the University.
3. Non-degree seeking applicants must submit a brief (1-2 pages) statement that describes educational and work experiences in business, including their background in software testing. GMAT scores are not required. However, acceptance into the certificate program is not an implied acceptance into any master's degree program.

## Program Requirements:

The following 4 courses must be satisfactorily completed for a total of 12 hours of credit.

- MIS 7610 - Sys Analysis & Design \*\* Credit Hours: (3)
- MIS 7655 - Adv Systems Analysis Credit Hours: (3)
- MIS 6681 - Fundamental/Software Testing Credit Hours: (3)
- MIS 6682 - Advanced Software Testing Credit Hours: (3)

## Graduation Requirements

1. The student must complete all 4 required courses with an average grade of B (3.0) or higher, for a total of 12 credit hours.
2. In the semester of graduation, the student must submit an Apply to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to the College Director of Graduate Studies by the deadline specified by the Graduate School.

## Special Education Comprehensive Graduate Certificate

### Graduate Certificate

The Special Education Comprehensive Certificate is designed for individuals seeking certification in Comprehensive Special Education or wanting to enhance their knowledge of Low Incidence Disabilities. The program provides advanced coursework directed at evidenced-based instructional practices for K-12 students with low incidence disabilities (e.g., intellectual disorders, ASD, multiple disabilities).

### Admission Requirements:

- Application to the Graduate School
- A minimum undergraduate GPA of 3.0 on a 4.0 scale
- Submission of a 2-page essay outlining past experience with individuals with disabilities and goals for acquiring a certificate in Comprehensive Special Education (in lieu of a GRE score)

### Program Requirements:

Completion of the following four courses:

- SPED 7050 - Teach Exceptnl Learner Credit Hours: (2-3)
- SPED 7511 - Intellectual Disabilities Credit Hours: (3)
- ICL 7105 - Lang/Comm Inclusive Classrm \*\* Credit Hours: (3)
- SPED 7600 - Intro to Aut Spec Dis Credit Hours: (3)

\*Courses are already within Instruction Curriculum Leadership (ICL) Graduate Catalog

### Graduation Requirements:

To receive this certificate, students must have successfully passed all four courses with a 3.0 or higher (cumulative for the four-course sequence) and received no less than a letter grade of B in any of the four courses.

## Retention Requirements:

All students enrolled in the four-course certificate program must earn and maintain a 3.0 GPA or higher for each of the courses. Failure to receive a letter grade of B or higher will result in student retaking the course to successfully complete the certificate program.

## Sport Nutrition and Dietary Supplementation Graduate Certificate

The topics of sport nutrition and dietary supplementation continue to gain momentum in the research world, as well as in clinical practice. Multiple peer-reviewed scientific journals are now dedicated to presenting literature specific to the area of sport nutrition. The same is true for the study of dietary supplementation.

The graduate certificate in Sport Nutrition and Dietary Supplementation is particularly useful for registered dietitians/nutritionists, strength and conditioning coaches, personal trainers, and healthcare providers (e.g., nurses, pharmacists) who may receive questions from athletes and/or patients specific to the topics of sport nutrition and dietary supplementation.

## Program Requirements

Consisting of 12 credit hours, students complete three required courses (each consisting of 3 credit hours), with a choice for the final three credit hours. All courses are delivered online and can be completed in any sequence.

### Required Courses

- NUTR 7000 - Sport Nutrition \*\* Credit Hours: (3)
- NUTR 7001 - Nutraceuticals and Dietary Sup \*\* Credit Hours: (3)
- NUTR 7002 - Exer & Nutrition Immunology \*\* Credit Hours: (3)

Three additional credit hours will be completed by choosing from the following options:

- NUTR 7003 - Practicum in Sport Nutrition \*\* Credit Hours: (3)
- ESMS 7202 - Phys Ex Mtbolc/Cardresp\*\* Credit Hours: (3)
- HPRO 7780 - Health Counseling \*\* Credit Hours: (3)

NOTE: NUTR 7003 consists of credit provided through the Experiential Learning Credit (ELC) program.

See [www.memphis.edu/innovation/elc/experiential\\_learning.php](http://www.memphis.edu/innovation/elc/experiential_learning.php)

Students should complete a minimum of 250 hours of sport nutrition counseling experience to satisfy this ELC requirement. This may include one-on-one or group counseling. Students may perform this work independently with clients or under the supervision of a mentor/employer. Two verification statements from employers or other individuals who can confirm that the 250 hours of counseling was performed satisfactorily are required. In addition, students must complete a written summary of the work that was performed, documenting the work in detail. The summary should be detailed and complete but should not exceed two written pages.

## STEM (Science, Technology, Engineering, and Mathematics) Teacher Leadership Graduate Certificate

### Graduate Certificate

The goal of the certificate program in STEM (Science, Technology, Engineering, and Mathematics) Teacher Leadership is to develop the knowledge and skills of secondary mathematics, science, and engineering teachers who are currently teaching in local area schools. The coursework is designed to promote in-depth understanding of current standards and instructional practices with a particular focus on building teacher leaders in STEM education.

## Program Admission:

Students interested in receiving a Certificate in STEM Teacher Leadership must be apply to and be accepted to this graduate certificate program. Applicants must hold a current teaching license. The courses may be completed as part of a degree program with the advisor's approval.

## Program Requirements:

A total of twelve (12) credit hours are required to complete this program.

- ICL 7720 - STEM Curriculum Leadership **Credit Hours: (3)**
- ICL 8720 - STEM Curriculum Leadership **Credit Hours: (3)**
  
- ICL 7721 - STEM Teacher Development **Credit Hours: (3)**
- ICL 8721 - STEM Teacher Development **Credit Hours: (3)**
  
- ICL 7722 - Teaching and Learning in STEM **Credit Hours: (3)**
- ICL 8722 - Teaching and Learning in STEM **Credit Hours: (3)**
  
- ICL 7723 - Equity in STEM Education **Credit Hours: (3)**
- ICL 8723 - Equity in STEM Education **Credit Hours: (3)**

## Graduation Requirements

1. The student must complete all four required courses with an average grade of B (3.0) or higher, for a total of 12 credit hours.
2. In the semester of graduation, the student must submit the Apply to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to Graduate Analyst in Ball Hall 215 (3798 Walker Ave., Memphis, TN 38152) by the deadline specified by the Graduate School.

## Strategic Leadership Graduate Certificate

The Graduate Certificate in Strategic Leadership is a 12-hour program (four courses) designed to provide theoretical and practical knowledge to enhance leadership skills. The program is specifically designed for the working professional.

The hours earned in the certificate program may be applied toward the Master's degree in Professional Studies with a concentration in Strategic Leadership.

## Core Requirements (9 hours):

- PRST 7100 - Prof Environ/Issue/Ethic \*\* **Credit Hours: (3)**
- PRST 7200 - Globalization/Profnsns \*\* **Credit Hours: (3)**
- PRST 7500 - Foundation/Leadership \*\* **Credit Hours: (3)**

One elective from the following (3 hours):

- PRST 7310 - Leadership/Organization \*\* Credit Hours: (3)
- UNIV 7111 - Data-Based Decision-making \*\* Credit Hours: (3)
- PRST 7700 - Conflict Mgmt/Negotiatn \*\* Credit Hours: (3)

## Substance Abuse Interprofessional Graduate Certificate

### Graduate Certificate

The purpose of the Interprofessional Graduate Certificate in Substance Abuse train student to work with populations impacted by substance use disorders (SUD) in the Memphis and greater Midsouth region.

### Admission Requirements:

The certificate is designed to be completed in conjunction with a graduate degree in Social Work, Counseling, Psychology, or post-master's degree.

- Admission into the University of Memphis at the graduate level in one of the above disciplines.

### Program Requirements:

#### Core Course

Students are required to take the following course (3 credit hours):

- SWRK 7949 - Screening, Brief Intervention, and Referral to Treatment (SBIRT) **Credit Hours: 3**

#### Elective Courses

Choose three courses (9 credit hours) from the following:

- SWRK 6061 - Substance Abuse Treatment \*\* Credit Hours: (3)
- SWRK 7005 - Assessmnt,Diag,Psychopath \*\* Credit Hours: (3)
- SWRK 7013 - Treatment of Trauma Credit Hours: (3)
- SWRK 7028 - Advanced Individual Practice Across Systems Credit Hours: 3
- COUN 6783 - Alcohol/Drug Abuse Ser Credit Hours: (3)
- PSYC 7207 - Developmental Psyc Credit Hours: (3)
- PSYC 7412 - Psychopathology Credit Hours: (3)
- PSYC 7434 - Clin Psychotherapies Credit Hours: (3)
- PSYC 7705 - Neuropsychopharmacology Credit Hours: (3)

### Graduation Requirements:

1. Students must complete all four required courses with an average grade of B (3.0) or higher for a total of 12 credit hours.
2. Students may earn no more than 3 credit hours of C+, C, or C- grades.

## Retention Requirements:

All students are required to maintain a cumulative GPA of at least 3.00. Should the student's cumulative GPA fall below that mark, a period of one semester will be allowed to correct the deficiency. At the discretion of the chair, the director of graduate studies in the student's college, and the Assistant Vice Provost for Graduate Studies, this period may be extended one additional semester. No more than 6 hours of "C-," "C" or "C+" will be applied toward meeting graduate degree requirements. "D+," "D," and "F" will not be applied towards the graduate degree requirements. All students who fall below a GPA of 3.0 for one semester, and all students who earn a grade of "D+," "D," or "F" will be automatically referred to meet with the program retention committee the following semester.

## Supply Chain Management Graduate Certificate

### Graduate Certificate

The Supply Chain Management (SCM) Graduate Certificate is composed of four 3-credit courses (12 credits). The focus of the certificate is to provide students with a foundation in the concepts, tools, and practices of SCM.

### Admission Requirements

1. Same as college and university requirements.
2. The SCM Graduate Certificate program may be pursued concurrently with other programs at the University of Memphis. To be approved for the program, students must complete an application form and submit it along with a current graduate transcript to the Marketing and SCM Department for review.
3. Non-degree seeking graduate students may also pursue this certificate program of study. To be approved for the program, these students must submit evidence of this non-degree-seeking graduate student status, along with the completed application form, to the Marketing and SCM Department for review.
4. Admission to this certificate program is not an implied acceptance into any other program in the Fogelman College of Business and Economics.

### Program Requirements

- SCMS 6510 - Operations Planning & Control **Credit Hours: (3)**
- SCMS 6620 - Logistics Management **Credit Hours: (3)**
- SCMS 6650 - Supply Management **Credit Hours: (3)**
- SCMS 7313 - Supply Chain Operations Mgmt \*\* **Credit Hours: (3)**

### Graduation Requirements

1. To obtain the certificate, a student must complete all four of the required courses with an average grade of 3.0 (B) or higher, for a total of 12 credits.
2. In the semester of graduation, the student must submit an Intent to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to the College Director of Graduate Studies by the deadline specified by the Graduate School.

## Retention Requirements

Students in the certificate program must comply with all retention standards of the Graduate School at the University of Memphis. All students are required to maintain a cumulative GPA of at least 3.0. Should the student's cumulative GPA fall below that mark, a period of one semester will be allowed to correct the deficiency. Students failing to improve their GPA to an acceptable level in that time will be dismissed from the program.

## Taxation Graduate Certificate

### Graduate Certificate

The focus of the certificate is to provide students with both a practical and theoretical foundation and applied hands-on skills. The certificate is dedicated exclusively to the study of taxation. This certificate is designed for students who are interested in studying taxation for their own professional practice, for a family business, or as a career-builder by developing tax skills and broad business thinking while working for small or large corporations.

### Admission Requirements

1. Admission to the Certificate in Taxation program requires a baccalaureate degree from an accredited college or university and completion of ACCT 3510 (Individual Taxation) or its equivalent. Completion of an admission test is not required.
2. The Certificate in Taxation program may be pursued concurrently with other programs at the University of Memphis. To be approved for the program, students must complete an application form and submit it and a current graduate transcript to the School of Accountancy for review.
3. Non-degree seeking graduate students may also pursue this certificate program of study. To be approved for the program, these students must submit evidence of this non-degree-seeking graduate student status, along with the completed application form, to the School of Accountancy for review.
4. Admission to this certificate program is not an implied acceptance into any other program in the Fogelman College of Business and Economics.

### Program Requirements

The certificate program requires completion of 12 semester credit hours, as follows:

#### Required Courses

- ACCT 7510 - Tax Research & Theory **Credit Hours: (3)**
- ACCT 7511 - Tax- Partnerships/Prtnrs \*\* **Credit Hours: (3)**
- ACCT 7521 - Taxation/Bus Entities **Credit Hours: (3)**

#### Electives (choose one)

- MIS 7605 - Bus Database Systems \*\* **Credit Hours: (3)**
- MIS 7700 - Fundamentals of Data Analytics **Credit Hours: (3)**  
LAW Course 385 U.S. Taxation of International Income  
LAW Course 370 Non-Profit Organizations

## Graduation Requirements

1. To obtain the certificate, a student must complete all four of the required courses with an average grade of 3.0 (B) or higher, for a total of 12 credits.
2. In the semester of completion, the student must submit an Intent to Graduate Form to the Graduate School and a Graduate Certificate Candidacy form to the College Director of Graduate Studies by the deadline specified by the Graduate School.

## Retention Requirements

Students receiving more than three semester letter grades below B- will be dropped out of the certificate program.

## Teaching English to Speakers of Other Languages Graduate Certificate

### Certificate Program (TESOL)

The TESOL Graduate Certificate provides training to those interested in teaching English to Speakers of Other Languages. The certificate is given for to those who complete the practical preparation needed to teach English both within and outside the United States to post-secondary students and adults. The specific courses for the certificate include the specific knowledge and skills specified for ESL teachers and identified by TESOL, Teachers of English to Speakers of Other Languages, Inc. Students have the option of completing the program on-line. [Click here to view corresponding gainful employment data.](#)

Note: The Certificate in Teaching of English to Speakers of Other Languages is not a program to prepare K-12 ESL teachers. Pre-service and in-service teachers seeking an ESL certificate and an add-on endorsement in ESL for K-12 should contact the College of Education for details.

## Admission Requirements

Applicants should hold a BA degree in any field with a GPA of at least 2.75.

International students must have a TOEFL score of 80, or an overall Band IELTS score of 6.5.

Applicants must submit a one-page personal statement and two letters of recommendation to the English Department.

Since 15 credit hours in the certificate program may also count toward the MA degree, it is expected that many fully-admitted students will earn the certificate on their way to the MA degree. Certificate students wishing to earn the MA must make formal application for the master's program following all guidelines specified by the English Department and the University.

## Program Requirements

### Fifteen (15) semester credit hours

The certificate program requires completion of fifteen (15) semester credit hours including:

### Twelve (12) credit hours

Twelve (12) credit hours must be met by satisfactory completion of the following core courses:

- ENGL 7531 - Theory and History of ESL \*\* Credit Hours: (3)



- ENGL 7532 - Principles of Skills Assessment \*\* Credit Hours: (3)
- ENGL 7535 - ESL Grammar \*\* Credit Hours: (3)
- ENGL 7530 - Field Experience and Practicum in ESL \*\* Credit Hours: (3-6)

Three (3) elective hours may be selected from:

- ENGL 7533 - Methods/Techniques of ESL in K-12 \*\* Credit Hours: (3)
- ENGL 7536 - Issues in Second Language Writing \*\* Credit Hours: (3)
- ENGL 7537 - Issues in Second Language Reading \*\* Credit Hours: (3)
- ENGL 7538 - Cultural Issues in ESL \*\* Credit Hours: (3)
- ENGL 6533 - ESL/EFL in Multicultural Settings Credit Hours: (3)

Note:

Those also seeking ESL add-on endorsement must complete ENGL 7533 and ENGL 7538. Praxis II for ESL is also required for the add-on endorsement.

## Retention Requirements

Same as retention policies applicable to Department of English graduate degree programs.

## Graduation Requirements

Relatively early in the semester in which they intend to graduate, certificate candidates must "Apply to Graduate" in the MyMemphis Portal and submit a Candidacy form with the Graduate Coordinator for English.

## Teaching of Mathematics Graduate Certificate

Program objective is to provide content knowledge training required for teaching lower division college mathematics courses. This training will help high school teachers meet the content knowledge requirements for the teaching of dual enrollment courses, and help satisfy the demand created by the Tennessee Promise program, for individuals qualified to teach mathematics in community colleges.

## Requirements

### Admission Requirements:

1. An undergraduate degree with a major in mathematics, statistics, or mathematics secondary education is required. The minimum GPA is 2.5 on a 4.0 scale. Students whose major was not in mathematics, statistics, or mathematics secondary education will be considered on a case-by-case basis.
2. GRE General Test scores are required and are an important factor in admission. This requirement may be waived for those applicants who have a graduate degree (master's degree or higher) already, who have a graduate GPA of 3.0 or above, and who have work experience in an education related field for 3 or more years. If GRE scores are waived, applicants will have to provide contact details of two referees who are able to address their suitability for this graduate program.
3. TOEFL scores are required for students whose native language is not English.

### Program and Graduation Requirements:

The program consists of 18 Graduate Credit Hours in Mathematics, approved by the department and includes an in-depth study of the teaching of Pre-Calculus and Calculus. For information about the program requirements and Graduation requirements contact the Department of Mathematical Sciences at [msci-dept@memphis.edu](mailto:msci-dept@memphis.edu).

## Urban Education Graduate Certificate

### Graduate Certificate

This certificate program offers an advanced program of study in the expansive and distinct historical and contemporary knowledge, scholarship, and practical issues related to instruction and curriculum leadership in an urban educational context that has a diverse population, is geographically bounded, and is unique in its political, economic and cultural history, relationships, and interactions. It complements existing College of Education programs by offering a structured, focused course of study, consisting of 12 credit hours of core courses. These courses may be completed as part of a degree program with the advisor's approval, or as additional course work.

### Program Admission

Students interested in receiving a Certificate in Urban Education must apply and be admitted to this graduate certificate program and preferably to a College of Education graduate degree program, such as the master's or doctoral major in the Department of Instruction and Curriculum Leadership. Application is through the office of Graduate Admissions. Applicants must also complete an interview with the certificate coordinator. The courses may be completed as part of a degree program with the advisor's approval.

### Program Requirements

The following four core courses are required for the Certificate in Urban Education:

- ICL 7701 - Adv Wksp ICL:Urban Educ Credit Hours: (3)
- ICL 8701 - Adv Wksp ICL:Urban Educ Credit Hours: (3)
  
- ICL 7702 - Adv Topics in ICL:Urban Educ Credit Hours: (3)
- ICL 8702 - Adv Topics in ICL:Urban Educ Credit Hours: (3)
  
- ICL 7706 - Family/Comm Relations Credit Hours: (3)
- ICL 8082 - Seminar in Urban Education Credit Hours: (3)

### Retention Requirements

Same as retention policies applicable to Department of Instruction and Curriculum Leadership graduate degree programs.

### Graduation Requirements

1. The student must complete all four required courses with an average grade of B (3.0) or higher, for a total of 12 credit hours.
2. In the semester of graduation, the student must submit the Apply to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to the Graduate Analyst in Ball Hall 215 (3798 Walker Ave., Memphis, TN 38152) by the deadline specified by the Graduate School.

## Vocology Graduate Certificate

### Admission Requirements:

1. To be eligible for the certificate program the student should either have undergraduate coursework in music, theater, or communication sciences and disorders and be currently enrolled at the University of Memphis as a graduate student.
2. Applicants must have a bachelor's degree from an accredited institution with a GPA of at least 3.0.
3. Applicants who do not speak English as their primary language are required to meet the University's minimum TOEFL score.
4. To apply, students must submit an application form, a current or completed undergraduate transcript, and a one-page letter of intent. Letters of intent should describe reasons for pursuing the certificate, relevant background and experiences, and/or professional goals or plans.
5. Admission to this certificate program does not imply acceptance into any graduate program at the Rudi E. Scheidt School of Music or the School of Communication Sciences and Disorders, within the university, or at outside institutions.
6. Graduate credit obtained in this certificate is not guaranteed to transfer to our program or any other program as credit to fulfill the degree sought.
7. Students will be required to sign a waiver acknowledging the policies and limitations of this program.

### Program Requirements:

Students are required to take the 4 required courses listed below. In addition, students are highly encouraged to take the elective courses listed depending on the intended professional program of choice.

### Required Courses (12 credit hours):

- AUSP 7000 - Speech Science **Credit Hours: (3)**
- AUSP 7003 - Anat Phys Spch Mech **Credit Hours: (3)**
- MUSE 7501 - Vocal Pedagogy 1 **Credit Hours: (3)**
- MUSE 7502 - Vocal Pedagogy 2 **Credit Hours: (3)**

### Electives:

- AUSP 7203 - Voice Disorders **Credit Hours: (3)**
- AUSP 7207 - Clinical Instrumentation **Credit Hours: (1-3)**

### Retention and Graduation Requirements:

1. To obtain the certificate, students must complete all of the required courses (12 credits) with a minimum grade of B- in each course.
2. In the semester of graduation, the student must submit an Intent to Graduate form to the Graduate School and a Graduate Certificate Candidacy form to the Director of Graduate Studies by the deadline specified by the Graduate School.
3. If a student receives a grade lower than B- in any of the above required courses, their status in the certificate will be put on probation. If they receive a subsequent grade lower than B- in any of the above required courses, they will be removed from the certificate program.

## Women's and Gender Studies Graduate Certificate

The Graduate Certificate in Women's and Gender Studies is an interdisciplinary program open to students currently admitted to any graduate program at the University of Memphis. It is also available to graduate students enrolled at another institution, as well as to individuals holding a graduate degree who wish to pursue further professional credentials. The program draws on the expertise of faculty from different departments and colleges, including the Colleges of Arts and Sciences, Education, and Business; therefore, the academic program for each student will be individually crafted in consultation with the Women's and Gender Studies advisors.

The certificate provides recipients with a specific and documented knowledge of Women's and Gender Studies. Not only an advantage to those pursuing advanced degrees in related fields, the certificate program satisfies the demands of a labor market increasingly oriented toward those trained in managing diversity and services for women.

### Graduate Certificate

The Graduate Certificate in Women's and Gender Studies is an interdisciplinary program open to students currently admitted to any graduate program at the University of Memphis. It is also available to graduate students enrolled at another institution, as well as to individuals holding a graduate degree who wish to pursue further professional credentials. The program draws on the expertise of faculty from different departments and colleges, including the Colleges of Arts and Sciences, Education, and Business; therefore, the academic program for each student will be individually crafted in consultation with the Women's and Gender Studies advisors.

The certificate provides recipients with a specific and documented knowledge of Women's and Gender Studies. Not only an advantage to those pursuing advanced degrees in related fields, the certificate program satisfies the demands of a labor market increasingly oriented toward those trained in managing diversity and services for women.

### Admission to the Program

1. Students currently admitted to a graduate program at the University of Memphis or other university, as well as students already holding a graduate degree, may apply for admission to the Graduate Certificate Program in Women's and Gender Studies.
2. For students enrolled in a graduate program, a minimum undergraduate GPA of 2.8 is required for admission.
3. Students must apply to both the certificate program and the Graduate School. To apply, students submit:
  1. Transcript of undergraduate degree program and transcripts of prior and current graduate study
  2. A letter describing reasons why the student is interested in pursuing a graduate certificate in the area of Women's and Gender Studies and how the program corresponds with prior experience and anticipated career plans
  3. GRE scores are required and are an important factor in admission
  4. A minimum score of 550 on the TOEFL and a minimum score of 50 on the Test of Spoken English (for students whose native language is not English)

### Program Requirements

1. The certificate program requires completion of twelve (12) semester credit hours.
2. Three (3) credit hours must be met by satisfactory completion of either SOCI 7421 - Racial & Social Inequality; or SOCI 8421 Race & Social Inequality or SOCI 7410 Sociology of Gender or SOCI 8410 Sociology of Gender or SOCI 7411 Social Stratification or SOCI 8411 Social Stratification.
3. Nine (9) remaining hours will be selected in consultation with the Women's and Gender Studies advisors and prior to enrolling in the class to assure the courses include or treat centrally material relevant to the Certificate students. Course content may vary depending on the instructor and will not always be pertinent to the study of women and gender.

4. Select at least one course from the humanities group and one course from the social science group (courses from graduate programs that incorporate women's and gender issues, such as in the courses below, will be considered for inclusion as an approved elective).

**Core (must take one course -- 3 hours)**

- SOCI 7410 - Sociology Of Gender Credit Hours: (3)
- SOCI 7411 - Social Stratification Credit Hours: (3)
- SOCI 7421 - Racial & Social Inequal Credit Hours: (3)
- SOCI 8410 - Sociology Of Gender Credit Hours: (3)
- SOCI 8411 - Social Stratification Credit Hours: (3)
- SOCI 8422 - Race/Class/Gender Credit Hours: (3)

**Humanities Courses (must take at least one course - 3 hours):**

- COMM 6364 - Gender and Public Discourse Credit Hours: (3)
- COMM 6856 - Gender and Film Credit Hours: (3)
- ENGL 7329 - African American Literature, Beginnings to 1850 Credit Hours: (3)
- ENGL 7330 - Afr-Amer Lit 1850-1900 \*\* Credit Hours: (3)
- ENGL 7332 - Literature of the African Diaspora Credit Hours: (3)
- ENGL 7335 - African American Literature, 1989-Present Credit Hours: (3)
- ENGL 7336 - African American Literary Theory Credit Hours: (3)
- ENGL 7338 - Amiri Baraka and the Black Arts Movement Credit Hours: (3)
- ENGL 7392 - American Poetry Credit Hours: (3)
- ENGL 7451 - Women And Literature Credit Hours: (3)
- ENGL 7469 - African American Women Writers \*\* Credit Hours: (3)
- ENGL 7510 - Gender and Language Credit Hours: (3)
- ENGL 8329 - Afr-Amer Lit/Beg to 1850 Credit Hours: (3)
- ENGL 8330 - Afr-Amer Lit 1850-1900 \*\* Credit Hours: (3)
- ENGL 8332 - Lit of the African Diaspora Credit Hours: (3)
- ENGL 8335 - Afr-Amer Lit 1989 to Present Credit Hours: (3)
- ENGL 8336 - Afr-Amer Literary Theory Credit Hours: (3)
- ENGL 8338 - Baraka and Black Arts Credit Hours: (3)
- ENGL 8392 - American Poetry Credit Hours: (3)
- ENGL 8451 - Women And Literature Credit Hours: (3)
- ENGL 8469 - Af Amer Women Writers \*\* Credit Hours: (3)
- ENGL 8510 - Gender and Language Credit Hours: (3)
- HIST 6213 - Women/Gender/Latin Amer Credit Hours: (3)
- HIST 6289 - African Women's History Credit Hours: (3)
- HIST 6831 - History American Family \*\* Credit Hours: (3)
- HIST 6851 - Hist Women In America \*\* Credit Hours: (3)
- HIST 6853 - African American Women Credit Hours: (3)
- HIST 6863 - Hist Childhood/America \*\* Credit Hours: (3)
- HIST 7060 - Women/Gender Historiography Credit Hours: (3)
- HIST 8060 - Women/Gender Historiography Credit Hours: (3)

- HIST 7061 - Studies Women/Gender Hist \*\* Credit Hours: (3)
- HIST 8061 - Studies Women/Gender Hist Credit Hours: (3)
- HIAD 7444 - Multiculturalism Coll Camp \*\* Credit Hours: (3)
- MUHL 6013 - Women And Music Credit Hours: (3)
- PHIL 6441 - Recent Continental Phil Credit Hours: (3)
- PHIL 7020 - Seminar Major Figures Credit Hours: (3)
- WMST 7320 - Women&Multi-Cultrl Exp Credit Hours: (3)

### Social Science Courses (must take at least one course - 3 hours):

- ANTH 6551 - Culture/Sex/Childbirth Credit Hours: (3)
- CJUS 6010-6019 - Special Topics in Criminal Justice Credit Hours: (1-3)
- COUN 7723 - Hum Sexulty Coun/Psyc Credit Hours: (3)
- COUN 7751 - Gender Issues In Coun Credit Hours: (3)
- COUN 7752 - Coun Gay/Lesbian/Bisexl Credit Hours: (3)
- PSYC 7219 - Soc/Persnlty Devel Credit Hours: (3)
- PSYC 7900 - Psychology of Gender Credit Hours: (3)
- SOCI 7212 - Mult Racial Femnst Thry Credit Hours: (3)
- SOCI 7410 - Sociology Of Gender Credit Hours: (3)
- SOCI 7411 - Social Stratification Credit Hours: (3)
- SOCI 7421 - Racial & Social Inequal Credit Hours: (3)
- SOCI 7460 - Sociology of Sexualities Credit Hours: (3)
- SOCI 7853 - Gender And Health Credit Hours: (3)
- SOCI 8410 - Sociology Of Gender Credit Hours: (3)
- SOCI 8411 - Social Stratification Credit Hours: (3)
- SOCI 8422 - Race/Class/Gender Credit Hours: (3)

### Other Requirements

1. No more than two courses (6 hours) below the 7000 level are permissible.
2. Because the program is interdisciplinary, at least one course (3 hours) of coursework must be taken outside of the major department and from the list of courses provided.
3. In order to continue in the program, students must maintain at least a 3.0 GPA.
4. No course can be counted twice. For example, if you take SOCI 7410 to satisfy the Core requirement, you cannot also use it to satisfy a Social Science Elective requirement.

## Writing Studies Graduate Certificate

The purpose of this graduate certificate is to prepare students interested in rhetoric/composition, the teaching of writing, and/or technical communication the opportunity to earn a credential that will give them certification in a growing area of English studies that has been increasingly in demand, especially in the areas of post-secondary first-year writing programs, engineering writing programs, and professional writing programs.

### Admission Requirements:

1. The certificate program in Writing Studies can be pursued concurrently with any of the MA or PhD programs in the English Department, or with enrollment in any other MA or higher program offered at the UofM.
2. Along with the online application, applicants must submit a one-page personal statement and two letters of recommendation.

## Program Requirements:

The certificate in writing studies requires completion of 15 semester credit hours (5 courses), including:

### 2 Required Courses:

- ENGL 7003 - Thry/Prac Tchng Comp **Credit Hours: (3)** / ENGL 8003 - Thry/Prac Tchng Comp
- ENGL 7805 - Foundations of Writing Studies **Credit Hours: (3)** / ENGL 8805 - Foundations of Writing Studies

### 3 Courses From:

In consultation with their advisors, students choose three additional courses from the composition studies and professional writing offerings:

- ENGL 6618 - Document Design **\*\* Credit Hours: (3)**
- ENGL 6619 - Web Design/Online Writing **\*\* Credit Hours: (3)**
- ENGL 7001 - Acad Genre and Sch Pub **Credit Hours: (3)** / ENGL 8001 - Acad Genre and Sch Pub
- ENGL 7008 - Thry/Prac Tchng Online **\*\* Credit Hours: (3)** / ENGL 8008 - Thry/Prac Tchng Online **\*\***
- ENGL 7013 - Wkshp Hlth Care Writing **\*\* Credit Hours: (3)** / ENGL 8013 - Wkshp Hlth Care Writing **\*\***
- ENGL 7014 - Wkshp Public Hlth Care Writing **\*\* Credit Hours: (3)** / ENGL 8014 - Wkshp Public Hlth Care Writing
- ENGL 7350 - Rhetorical Theory **Credit Hours: (3)** / ENGL 8350 - Rhetorical Theory
- ENGL 7801 - History Composition **Credit Hours: (3)** / ENGL 8801 - History Composition
- ENGL 7806 - Resch Meth In Writing **Credit Hours: (3)** / ENGL 8806 - Resch Meth In Writing
- ENGL 7807 - Wksp/Govmt & Corp Wrtg **\*\* Credit Hours: (3)** / ENGL 8807 - Wksp/Govmt & Corp Wrtg **\*\***
- ENGL 7809 - Technical Editing **\*\* Credit Hours: (3)** / ENGL 8809 - Technical Editing **\*\***
- ENGL 7815 - Sem History Rhetoric **Credit Hours: (3)** / ENGL 8815 - Sem History Rhetoric
- ENGL 7818 - Collaborative Writing **\*\* Credit Hours: (3)** / ENGL 8818 - Collaborative Writing **\*\***
- ENGL 7819 - Rhetoric Of Science **Credit Hours: (3)** / ENGL 8819 - Rhetoric Of Science
- ENGL 7820 - Topics In Rhetoric **Credit Hours: (3)** / ENGL 8820 - Topics In Rhetoric
- ENGL 7822 - Cont Comp Theory **Credit Hours: (3)** / ENGL 8822 - Cont Comp Theory
- ENGL 7890 - Topic/Technical Writing **Credit Hours: (3)** / ENGL 8890 - Topic/Technical Writing

## Retention Requirements:

Same as retention policies applicable to Department of English graduate degree programs.

## Graduation Requirements:

Relatively early in the semester in which they intend to graduate, certificate candidates must file an Apply to Graduate Card with the Graduate School and a Candidacy form with the Graduate Coordinator for English.



## Accelerated Bachelors/Master's Programs

Accelerated Bachelor's to Master's (ABM) programs allow qualified undergraduates to earn up to 12 credit hours toward completion of both bachelor's and master's degrees simultaneously. ABM program options are available in a variety of academic disciplines and are designed to:

- Offer opportunities for high-ability undergraduate students to access more advanced experiences in their chosen area of study;
- Expose high-performing undergraduate students to graduate-level study to ascertain if the graduate program meets their professional aspirations;
- Appeal to highly capable students by accelerating their graduate program progression and completion.

Departments participating in ABM programs will conduct comprehensive reviews of the qualifications and backgrounds of high ability undergraduate students, including:

1. Invitation or sponsorship from a program faculty member and the student's undergraduate program advisor;
2. Undergraduate GPA, minimum cumulative 3.25;
3. Progress toward UG degree—within 30 semester hours of completion (exact hours may vary and are determined by the specific academic program);
4. Consideration of other factors based on discipline-specific guidelines or criteria.

**ABM program admission or completion is no guarantee of admission into or progression in a graduate program of study.**

Additional information about specific department admissions and curriculum may be found by clicking on the individual program links by selecting the latest Undergraduate Catalog from the drop-down menu. Then, under the **Academic Programs** heading select **Accelerated Programs**.

# Graduate Courses

Courses that may be offered online are indicated with (\*\*)asterisks next to the course title.

## Accountancy

### ACCT 6030 - Systems Assurance/Advisory I

**Credit Hours:** 3 **Description** Introduction to the IT Audit process; IT Audit tools and techniques; risk management techniques; application system risks and controls; audit of information systems operations. **PREREQUISITE(S):** ACCT 4020 **PREREQUISITE(S) or COREQUISITE(S):** ACCT 4240

### ACCT 6211 - Adv Financial & Gov Reporting

**Credit Hours:** (3) **Description** Business combinations and consolidated financial statements, accounting for foreign currency transactions, translation of foreign subsidiary financial statements, and partnership accounting. **PREREQUISITE(S):** ACCT 3120.

### ACCT 6521 - Individual Tax Compliance/Plan

**Credit Hours:** 3 **Description** Introduction to the federal income taxation of individuals. **PREREQUISITE(S):** ACCT 2010

### ACCT 6531 - Personal Tax Advisory

**Credit Hours:** 3 **Description** Individual tax planning, including tax reduction/management techniques; timing of income and expenses, tax consequences of charitable giving, and gift & estate planning. **PREREQUISITE(S):** ACCT 4521 or ACCT 6521 or PERMISSION OF THE DIRECTOR OF THE CREWS SCHOOL OF ACCOUNTANCY

### ACCT 7000 - Fundamentals Of Acct

**Credit Hours:** (3) Former: (7001) **Description** (7001). Accelerated and in-depth introduction to the conceptual foundations of accounting as a dynamic information system for measuring and communicating economic and financial data for planning and control purposes. Primarily for non-

business students but is acceptable to remove accounting prerequisites for the MBA and MS programs.

### ACCT 7040 - Legal Concepts Business

**Credit Hours:** (3) **Description** A survey of the legal, social, and political factors that affect business operations; prerequisite for MBA Core Knowledge and Skills.

### ACCT 7050 - Corp Governance/Sustainability

**Credit Hours:** (3) **Description** Detailed analysis of the role of corporate governance in the free enterprise system and capital markets; focused consideration of moral principles, ethical standards, and corporate code of business ethics. Standard Letter

### ACCT 7080 - Financial/Managerial Acct Mgrs \*\*

**Credit Hours:** (3) **Description** Use of accounting information by an organization's investors, creditors, regulatory authorities and managers; develops financial credit analysis skills useful in business decision making; analysis of accounting information useful for monitoring efficiency, quality, and timeliness of an operation; pricing and costing of products and services; planning and performance measurement.

### ACCT 7110 - Acct for Decision Making

**Credit Hours:** (3) Former: (7010) **Description** (7010). Financial reporting from a decision-maker's perspective, managerial use of accounting information; includes case studies and research projects. NOTE: Not open to students who have received credit for ACCT 3310 or a similar course.

### ACCT 7120 - Current Topics in Fin. Acct.

**Credit Hours:** (3) **Description** Theoretical aspects of financial reporting focusing on the quality of accounting reports and contemporary accounting controversies; case studies and research projects. **PREREQUISITE(S):** ACCT 3120.

**ACCT 7140 - Financial Statement Analysis**

\*\*

**Credit Hours:** (3) **Description** Examining financial statements in the context of identifying the financial information available to analysts as well as techniques useful in transforming this basic information into forms more useful for analysis. **PREREQUISITE(S):** ACCT 2010 or ACCT 7080.

**ACCT 7172 - Global Acct Policies**

**Credit Hours:** (3) **Description** Accelerated and in-depth introduction to conceptual foundations of financial and managerial accounting; selected tax topics. Restricted to students enrolled in IMBA concentration. Restricted to students enrolled in IMBA concentration.

**ACCT 7211 - Advanced Financial Reporting**

\*\*

**Credit Hours:** (3) **Description** Business combinations; accounting methods for consolidated financial statements; foreign transactions and accounting for foreign subsidiaries; partnership accounting. **PREREQUISITE(S):** ACCT 3120 with a grade of "C" or better.

**ACCT 7232 - Emerging Attestations**

**Credit Hours:** 3 **Description** The course examines the future of the accounting profession in general and recent and prospective new types of Auditor Attestations and the methods and rules for conducting them. **PREREQUISITE(S):** ACCT 4020 and ACCT 4240

**ACCT 7241 - Internal Auditing \*\***

**Credit Hours:** (3) **Description** Authoritative internal audit standards, ethics of internal auditors, techniques of efficiency and effectiveness audits. **PREREQUISITE(S):** ACCT 4240 or PERMISSION OF THE CREWS SCHOOL OF ACCOUNTANCY

**ACCT 7242 - Advanced Auditing \*\***

**Credit Hours:** (3) Former: (0551)(6241). **Description** Auditing of computer-based accounting systems; emphasis on audit software and computer auditing techniques used to evaluate accounting system controls and test accounting data integrity; nature and use of expert systems in accounting with

emphasis on their use as an audit tool. **PREREQUISITE(S):** ACCT 3120 **PREREQUISITE(S)** or **COREQUISITE(S):** ACCT 4240.

**ACCT 7310 - Adv Cost Accounting**

**Credit Hours:** (3) **Description** Budgets, determination of standards, variances and their functions, cost reports, profit projecting, direct costing, gross profit and breakeven analysis, cost-profit volume analysis, capital expenditure control, comparative cost analysis. **PREREQUISITE(S):** ACCT 3310 or ACCT 7110.

**ACCT 7312 - Accounting Data Analytics II**

**Credit Hours:** 3 **Description** This course builds on multivariate analysis techniques as applied to business problems by introducing students to data-driven analytics approaches to business data and decision making. Topics include data gathering and cleaning, classification techniques, dimensionality reduction, data visualization, and model selection. The course uses a hands- on approach. **PREREQUISITE(S):** ACCT 3320 or equivalent

**ACCT 7320 - Controllership**

**Credit Hours:** (3) Former: 6320 **Description** Controllership function; evolution of management accounting; conceptual framework of management accounting compared and contrasted with financial accounting; functional tools used by controllers; emphasis on research, and written and oral communication skills in context of management accounting. **PREREQUISITE(S):** ACCT 3310.

**ACCT 7322 - Advanced Managerial Acct \*\***

**Credit Hours:** (3) Former: 6320 **Description** Evolution of management accounting; functional tools used by manager/controllers; written and oral communication skills in the context of management accounting. Students will develop accounting data analytic skills and apply them to business setting using business cases. **PREREQUISITE(S):** ACCT 3120, ACCT 3310.

**ACCT 7412 - Legal/Acctg Aspects Entrep**

**Credit Hours:** (3) **Description** Prepares students to understand the regulatory framework for establishing a firm, legal forms of a business such as sole proprietorship, partnership, S corporation, and LLC; study of federal

securities regulations, accounting, auditing, taxes, financial reporting, and uses of accounting data. The course also covers contract law, cyber law, copyrights and patents, ethics and social entrepreneurship.

### **ACCT 7420 - Acct Databases/Systems**

**Credit Hours:** (3) **Description** Accounting systems analysis and design; advanced system analysis tools; integrating accounting and computer controls; ACCESS; queries; forms and reports; achieving database normalization; development of working accounting model; project; lab environment. **PREREQUISITE(S):** ACCT 3110.

### **ACCT 7510 - Tax Research & Theory**

**Credit Hours:** (3) **Description** Advanced study of federal taxation with emphasis on tax research methodology and various theoretical precepts; integration of basic tax knowledge with skillful tax research to accomplish desired ethical tax objectives. **PREREQUISITE(S):** ACCT 7521.

### **ACCT 7511 - Tax- Partnerships/Prtnrns \*\***

**Credit Hours:** (3) **Description** Tax law organization, operation, and liquidation of partnerships; general overview of Subchapter K, acquisitions of partnership interests, basis of partner's partnership interest, taxation of partnership operations, transfers of partnership interests, partnership distributions, death or retirement of partner, adjustments to basis of partnership assets. **PREREQUISITE(S):** ACCT 7510 or permission of the instructor.

### **ACCT 7512 - Tax-Corp/Shrhldrs**

**Credit Hours:** (3) **Description** Tax law: organization, operation, and liquidation of corporations; organization of corporation under Code Section 351 and related problems; corporation's capital structure; corporate income tax; corporate elections under Subchapter S; stock redemptions and partial liquidations; and corporate reorganizations and liquidations. **PREREQUISITE(S):** ACCT 7510 or permission of the instructor.

### **ACCT 7514 - Estate And Gift Tax**

**Credit Hours:** (3) **Description** Transfer taxes (gift tax, estate tax, generation-skipping transfer taxes; all taxes on transfer of property accumulated after imposition of income tax); federal gift and death taxes with emphasis on tax planning.

**PREREQUISITE(S):** ACCT 7510 or permission of the instructor.

### **ACCT 7518 - Selected Topics/Taxatn**

**Credit Hours:** (3) **Description** Special tax considerations of individuals, partnership, corporations, estates, trusts, exempt organizations, and governmental entities.

**PREREQUISITE(S):** ACCT 7510 or permission of the instructor.

### **ACCT 7521 - Taxation/Bus Entities**

**Credit Hours:** (3) Former: (6520). **Description** Introduction to the federal income taxation of corporations, partnerships, estates, and trusts. **PREREQUISITE(S):** ACCT 3510 or ACCT 4521 or ACCT 6521 or permission of instructor.

### **ACCT 7610 - Acct Issues/Servc Econ**

**Credit Hours:** (3) **Description** This culminating experience integrates financial, managerial, accounting information systems, auditing and tax knowledge and skills developed in core courses of the MS in accounting. **PREREQUISITE(S):** 15 hours of graduate-level accounting courses and permission of either Director of School of Accountancy or accounting masters advisor.

### **ACCT 7626 - CPA Review I \*\***

**Credit Hours:** (3) **Description** Theory and practice of financial accounting and reporting for profit and non-profit entities, including governments; auditing and attestation standards and procedures. **PREREQUISITE(S):** Permission of the School of Accountancy.

### **ACCT 7627 - CPA Review II \*\***

**Credit Hours:** (3) **Description** Theory and practice of regulatory and business environments; nature and types of common business structures; technology in business environment; business laws and regulatory issues; taxation of businesses; individuals and property transactions. **PREREQUISITE(S):** Permission of the School of Accountancy.

### **ACCT 7910 - Problems In Acct**

**Credit Hours:** (1-3) **Description** Directed independent reading and research projects in an area selected by the student with the approval of the supervising faculty member and

Faculty Director. Proposed plan of study must be approved prior to enrollment. **PREREQUISITE(S):** Permission of the director Grades of A-F, or IP will be given.

### **ACCT 7911 - Intrnshp Accounting**

**Credit Hours:** (1-6) **Description** Internship in business organization to gain on-the-job experience and to develop writing, organizational, and applied performance skills. Projects approved and supervised by area of Accountancy. NOTE: Credit not applicable to accounting master's degrees. **PREREQUISITE(S):** Graduate standing and permission of College Internship Director Grades of A-F, or IP will be given.

### **ACCT 7920-7929 - Special Topics in Accountancy**

**Credit Hours:** (1-3) **Description** Varied topics. May be repeated with change in topic **PREREQUISITE(S):** Permission of Faculty Director.

### **ACCT 7996 - Thesis**

**Credit Hours:** (3-6) **Description** Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

### **ACCT 8000 - Indep Accounting Research**

**Credit Hours:** (1-6) **Description** Examination of research issues, opportunities and challenges in accounting as related to a student's field of concentration under direction of a faculty member. Proposed plan of study must be approved prior to enrollment. Grades of A-F, or IP will be given. Grades of A-F, or IP will be given.

### **ACCT 8610 - Seminar/Audit Research**

**Credit Hours:** (3) **Description** Examination of analytical, experimental and archival research in auditing relevant to all types of auditing and assurance services. This course focuses on the development of research skills related to auditing theory, practice and empirical research methods, a fundamental understanding and appreciation of the role of theory and anecdotal evidence in applied work and empirical research in auditing.

### **ACCT 8621 - Agency and Fin Econ Theory Sem**

**Credit Hours:** (3) **Description** Examination of theory and empirical research in financial accounting as related to capital markets and economic consequences. This course focuses on empirical accounting research, including the investigation of a broad range of research questions, and uses a variety of empirical research techniques, the role of accounting information in capital markets, the role of theory and anecdotal evidence in applied work and empirical research and economic consequences.

### **ACCT 8710 - Acct Research Sem/Adv Cap Mkts**

**Credit Hours:** (3) **Description** In-depth study of existing body of accounting literature in various areas of economics-based empirical research; emphasis on research design and methodology; design and development of individual research projects; applying various research methods in accounting literature; and experience in presenting research, refereeing papers, and publishing research projects.

### **ACCT 8720 - Acct Research Judgmt/Decision**

**Credit Hours:** (3) **Description** Examination of research on judgment and decision-making behavior in accounting that involves the observation of the behavior or beliefs of accountants or users of accounting information. This course focuses on experimental design, field studies and surveys as alternative methods for conducting empirical research relevant to real-world problem-solving activities.

### **ACCT 8731 - Seminar/Mgmt Accounting**

**Credit Hours:** (3) **Description** Examination of emerging and cutting-edge management accounting issues. This course focuses on the theoretical framework and empirical setting of managerial accounting research as relevant to the decision-making processes of management. Topics covered in this course include research on the application of knowledge and experience in accounting and financial reporting, budgeting, decision support, risk assessment and management, internal control and earnings management. 0 Standard Letter

### **ACCT 8740 - Introductory Research Seminar**

**Credit Hours:** (3) **Description** Examination of the nature of accounting research, including theoretical framework, research questions, hypothesis development and research methodology and testing. Emerging and cutting-edge accounting research is

examined in all areas of financial, managerial, auditing, tax, systems and international. This course develops research skills in retrieving data from databases and replicating existing accounting studies.

### **ACCT 8910 - Problems in Accounting**

**Credit Hours:** (1-12) **Description** Examination of research issues, opportunities and challenges in accounting as related to a student's field of concentration under direction of a faculty member. Proposed plan of study must be approved prior to enrollment. Grades of A-F, or IP will be given. Grades of S, U, or IP will be given.

### **Advanced Study in Teaching and Learning**

#### **ASTL 7700 - Portfolio Development \*\***

**Credit Hours:** (3) Former: (5700) **Description** Portfolio as authentic assessment tool documenting scholarship of teaching; use of artifacts/products/teacher work samples/student work samples as evidence of effective teaching; instructional examples organized into planning and teaching, actual teaching, assessment and evaluation, learning environment, professional growth, and communication following National Board for Professional Teaching Standards requirements.

#### **ASTL 7701 - Teacher As Learner**

**Credit Hours:** (3) Former: (5701) **Description** Improves knowledge and practice through professional reading, writing, dialogue, inquiry, and reflection; uses hardware and software to create effective literacy learning experiences; learn how to find, access, and assess materials from a variety of sources and to design and develop multi and hypermedia learning environments that promote active learning.

#### **ASTL 7703 - Knowledge Of Learner \*\***

**Credit Hours:** (3) Former: (5703) **Description** Human development from conception through adolescence applied to school settings; aspects of human development impacted by human interaction and nurturing and those unaffected by environmental input; includes gross and fine motor development, temperament, visual and auditory perception, family characteristics, genetic inheritance, attention, cognitive tempo, play, and language development.

#### **ASTL 7705 - Assessment Of Learning \*\***

**Credit Hours:** (3) Former: (5705) **Description** Introduction to learner-centered systematic assessment at the classroom level; overview of models for planning and implementing classroom assessment projects with emphasis on implementation, data collection, analysis, and reporting of results; overview of tools, techniques, and issues considered to design and use assessments focused on learner needs.

#### **ASTL 7706 - Learning Instruction Strategy**

**Credit Hours:** (3) Former: (5706) **Description** Analysis of theoretical and research support for selected models of instruction; emphasis on teaching applications.

#### **ASTL 7709 - Action Research \*\***

**Credit Hours:** (3) **Description** Empowers classroom teachers to construct their own knowledge and to make it available to others for the benefit of all learners; helps educators and other professionals understand the relationship between their own professional development and the process of improving the quality of pupils' and/or colleagues' learning.

#### **ASTL 7721 - Thry/Foundtn Dev Litrcy \*\***

**Credit Hours:** (3) Former: (5721) **Description** Explores nature of learning, of language, of the reading process, of the writing process, how children learn language, receptive vs. productive language, relationships among learning one's mother tongue" and learning to read and write, and implications for classroom instruction and assessment; includes applications of technology and diversity issues.

#### **ASTL 7723 - Teaching Begin Literacy \*\***

**Credit Hours:** (3) Former: (5723) **Description** Exploration of theory and best practices for family literacy from birth to school age, from preschool to kindergarten, followed by explorations of best practices for teaching reading and writing in the primary grades. Candidates will work with primary grade children to understand and implement best practices.

#### **ASTL 7725 - Literacy Growth/Mid Grd \*\***

**Credit Hours:** (3) Former: (5725) **Description** Engage candidates in reading and discussions of theory, understanding best practices, and implementing best practices in literacy instruction grades 4-8; instructional strategies will focus on understanding reading and writing as tools for learning in all content areas.

### **ASTL 7726 - Literacy Problems/K-8 \*\***

**Credit Hours:** (3) Former: (5726) **Description** Engages candidates in reading, discussions, and implementation of diagnostic tools and techniques in literacy for struggling students grades K-8.

### **ASTL 7729 - Rem/Literacy Problem K-8 \*\***

**Credit Hours:** (3) Former: (5729) **Description** Engages candidates in reading, discussions, and implementation of instructional strategies based on the data derived from the diagnostic tools employed with students in Literacy IV. These students will be struggling readers in grades K-8. Issues related to improving student writing will also be presented and explored.

## **Anthropology**

### **ANTH 6111 - Evolution and Human Health**

**\*\***

**Credit Hours:** (3) **Description** Implications of human evolutionary history for understanding human variation and contemporary health issues, including chronic and infectious disease; focus on importance of ecological and social context in shaping human development across the lifespan.

**PREREQUISITE(S):** ANTH 1100, or permission of instructor

### **ANTH 6220 - Culture/Environment/Justice**

**Credit Hours:** (3) **Description** This course looks at the intersections of culture, the environment, and social justice. This includes how people construct ideas about "nature" and attribute value to it, how people construct claims to "nature," and how those claims produce and perpetuate social and health inequalities. It examines historical and contemporary environmental movements including market-based strategies (conservation tourism, going "green," ethical consumption) and rights-based initiatives (human rights, environmental justice, indigenous rights).

### **ANTH 6221 - Gender and Culture**

**Credit Hours:** (3) **Description** This course provides an overview of different anthropological approaches to the study of gender and sexuality. Issues discussed will include: evolutionary perspectives and bio-cultural perspectives on sex/gender, the domestic/public divide and the division of labor, social variations in cultural constructions of femininity

and masculinity, queering the anthropological approach to gender and sexualities, and the mutually-constitutive roles of the state in gendered/sex practices. The course provides students a theoretical foundation for understanding gender as a central issue in anthropological pursuits.

### **ANTH 6223 - Refugees and Humanitarianism**

**Credit Hours:** (3) **Description** Critical look at human displacement from the perspective of refugees; modern category of the "refugee"; the refugee camp; displacement; statelessness, and the state; the politics and practices of humanitarian aid; repatriation and resettlement.

### **ANTH 6270 - Ancient Human Soc/Envir Chng**

**Credit Hours:** (3) *Cross listing* (Same as ESCI 6270)

**Description** Examination of past people and their environments from the Ice Age to recent times; archaeological and paleoecological data. Three lecture hours per week.

### **ANTH 6302 - Native People of North America**

**Credit Hours:** (3) **Description** Intensive ethnological study of various prehistoric cultures from earliest times until historic contact.

### **ANTH 6325 - Archaeol Fld/Lab Techn**

**Credit Hours:** (3) *Cross listing* (Same as ESCI 6325)

**Description** Instruction in field excavation, specimen preparation, use of survey instruments and photography, map making, archaeological record keeping; methods and techniques in archaeological laboratory analysis; emphasis on organization and supervision of laboratory procedures.

**PREREQUISITE(S):** permission of instructor.

### **ANTH 6335 - Analysis of Stone Artifacts**

**Credit Hours:** (3) *Cross listing* (Same as ESCI 6335).

**Description** Much of the prehistoric cultural record is pieced together through the analysis of stone artifacts. The class outlines the basics of stone "lithics" artifact analysis through an in-depth study of current techniques, instrumentation, and theory. Lecture is augmented by class discussion and hands-on experimentation "flintknapping."

### **ANTH 6350 - Archaeology of Collapse**

**Credit Hours:** (3) *Cross listing* (Same as ESCI 6350)

**Description** Emphasis on archaeology of regional politics and archaic states throughout the world. Overview of social and political collapse of complex societies.

### **ANTH 6411 - Urban Anthropology**

**Credit Hours:** (3) **Description** Anthropological studies of pre-industrial and industrial cities; urbanization, movements of social transformation and other processes of adjustment to an urban milieu; urban slums, ethnic enclaves, and housing developments in cross-cultural perspective; urban and social kinship and social organization; urban community development; urban research techniques.

### **ANTH 6415 - Anthropology Human Rights**

**Credit Hours:** (3) **Description** Anthropological approaches to critical human rights issues, debates, practices including gender, children, health, land, genocide, resettlement; broadly-defined human rights in specific national and cultural contexts; explores what anthropology, practitioners, and ethnographic methods offer our understanding of how human rights are interpreted and negotiated.

### **ANTH 6416 - Culture/Identity/Power**

**Credit Hours:** (3) **Description** Anthropological approaches to human identity in cross-cultural contexts. Examines how culture and power inform understandings and practices related to difference and stratification, and the forces of identity formation and reproduction cross-culturally with emphasis on ways that race, ethnicity, class, gender, sexuality, religion, nation, and community are constructed, negotiated, and resisted.

### **ANTH 6417 - Food/Culture/Power \*\***

**Credit Hours:** (3) **Description** Anthropological study at the intersection of the global industrialized food system and emerging alternatives; construction and negotiation of value, taste, and meaning of food throughout the life cycle of the food system, from field to fork and table to trash; marginality, power, and social action in food systems.

**PREREQUISITE(S):** ANTH 1200 or permission of instructor

### **ANTH 6418 - Anthropology of Organizations**

**Credit Hours:** (3) **Description** Anthropological approaches to studying organizations and institutions; ongoing development and change of organizational culture; knowledge and innovation in organizations; non-governmental organizations (NGOs); global, multi-sited, and virtual organizations; applied anthropology in an organizational context; power relationships among communities; organizations, institutions, and elites; collaborative ethnographies in organizations.

### **ANTH 6419 - Queer Anthropology**

**Credit Hours:** 3 **Description** This course provides students with an introduction to anthropological perspectives on non-normative genders and sexualities in transnational context, paying careful attention to the ways in which sexuality and gender intersect with class, nation, and race.

### **ANTH 6431 - Capitalism, Consumption, and Culture**

**Credit Hours:** (3) **Description** Advanced study of shopping and consumption from an anthropological perspective; contemporary consumer culture in the U S and around the world; emphasis on how consumption shapes/reflects individual identities and cultural trends; consumer movements and anti-consumerism; sociocultural and environmental impacts of consumer behavior; the role of ethnography in the market.

### **ANTH 6511 - Medical Anthropology**

**Credit Hours:** (3) **Description** Surveys the anthropology of health, illness, and curing systems, and how cultural, evolutionary, and environmental forces shape health and healing. Topics include ethnomedicine, nutrition, mental health, reproduction, addictions, health ecology, and evolutionary medicine. Examines how illness perceptions and health behaviors yield deeper insight into identity, values, agency, and health disparities. Considers roles for applied medical anthropology to improve care.

### **ANTH 6521 - Culture, Soc & Mental Health**

**Credit Hours:** (3) **Description** Examination of mental health and illness as a set of subjective experiences, social processes and objects of knowledge and intervention; cultural models of mental illness and healing; therapy as a cultural practice; substance abuse and addiction; mental health and relations of power; sociocultural dimensions of psycho-pharmacology



### **ANTH 6531 - Alcohol/Drugs/Culture**

**Credit Hours:** (3) **Description** Cross-cultural comparison of beliefs, meanings and behaviors regarding alcohol and other drug use; biological, social, economic, and political dimensions of alcohol and drugs; implications for prevention and treatment.

### **ANTH 6551 - Culture/Sex/Childbirth**

**Credit Hours:** (3) **Description** Review of biological, environmental, social, and cultural factors influencing human reproduction; comparison of cultural and clinical perspectives on sexual orientation and behavior, sexually transmitted diseases, fertility, birth control, pregnancy, birth, and postpartum care; evaluation of alternative delivery systems in Western and non-Western societies.

### **ANTH 6571 - Race and Health Disparities**

**Credit Hours:** (3) **Description** History of scientific racism and race in the public and healthcare spheres; current understandings of human biological and genetic variation; role of cultural constructions of race in differential exposures to health hazards and access to health care; racial health disparities; strategies for addressing health inequalities.

### **ANTH 6660 - Museum Collections \*\***

**Credit Hours:** (3) *Cross listing* (Same as ARTH 6660)  
**Description** Museum collection theory and methods, including collection policy, development, preservation, documentation, and interpretation. **PREREQUISITE(S):** Permission of instructor

### **ANTH 6661 - Collections Research**

**Credit Hours:** (3) *Cross listing* (Same as ARTH 6661)  
**Description** Introduces students in object-based disciplines to museum collections research methods and their applications to exhibitions, catalogs, and scholarly publications.  
**PREREQUISITE(S):** Permission of instructor

### **ANTH 6662 - Museum Exhibitions**

**Credit Hours:** (3) *Cross listing* (Same as ARTH 6662)  
**Description** Museum exhibition methods and theory, including research, design, layout, object selection and handling, installation, public programming, and evaluation.  
**PREREQUISITE(S):** Permission of instructor

### **ANTH 6680 - Applied Archaeology/Museums**

**Credit Hours:** (3) *Cross listing* (Same as ESCI 6680)  
**Description** Representations of cultural heritage in a broad array of public venues; repatriation, cultural patrimony, cultural resource management, civic engagement, rights and responsibilities of stakeholders, public involvement in museum representations, performance and education, culture and memory.

### **ANTH 6800 - Conservation, Culture, and Environmental Change**

**Credit Hours:** 3 Former: 6800 **Description** This course focuses on the intersection of culture and conservation policy, with virtual field-based research experience among conservation organizations in (virtually or through study abroad). The course introduces students to concepts and issues in environmental anthropology, with a specific focus on the intersection of culture change and conservation policy in the contexts of tourism development. Students enrolled in the course will participate in collaborative research with professionals working in conservation NGOs and community organizations and engage in cross-disciplinary dialogue on conservation policy, livelihoods, and culture change. Standard Letter

### **ANTH 6990-6999 - Special Topics in Anthropology \*\***

**Credit Hours:** (3) **Description** Addresses various areas of anthropology; topics are announced in the online course listing. May be repeated with change of topic.

### **ANTH 7050 - Ethnography & Global Problems**

**Credit Hours:** (3) **Description** This course looks at contemporary ethnographies to help make sense of the social problems. By looking closely at the dynamics between the powerful and powerless, ethnographic readings and analysis will focus on themes of inequality, value, security, identity and belonging, well being, and the promise and demise of capitalism. We will consider critical and challenging questions about the tensions between individuals, collectives, states, and empire. What does it mean to be situated in a particular part of the global world? We will engage the possibility for an emergent anthropology in action.

### **ANTH 7075 - Methods In Anthropology**

**Credit Hours:** (3) **Description** Critical examination of relationship between anthropological theory and methods; training in research ethics, ethnographic field research, and research design, including mixed-methods; engages major trends in contemporary anthropological research as a preparation for applying anthropology. **PREREQUISITE(S):** Non-majors must have permission of instructor.

### **ANTH 7076 - Anthropology Writing/Analysis**

**Credit Hours:** (3) **Description** This course addresses analysis of data and sharing of results from mixed-methods ethnographic research. Topics will include data management, collaboration, analysis and synthesis of qualitative and survey data and ethnographic and report writing. Focus will be placed on collaboration between students and faculty to make meaning out of anthropological data, and to contribute to knowledge building in anthropology and the public sphere. **PREREQUISITE(S):** ANTH 7075 or permission of instructor.

### **ANTH 7200 - Roots of Anth Theory**

**Credit Hours:** (3) **Description** Growth of anthropology as a discipline and development of major theoretical paradigms; historical roots of contemporary anthropological theory; implications of theory for application and practice; designed and required for graduate anthropology students, but open to graduate students in other disciplines.

### **ANTH 7201 - Anthropological Perspectives on Development**

**Credit Hours:** (3) **Description** Seminar covers the history of the relationship between anthropology and development and the role of anthropology/anthropologists and culture in development contexts. Topics include: globalization, migration, diaspora, deterritorialization, identity, transnationalism; the anthropology of planning and policy; gender and development; methods and ethics in anthropology of development. Emphasis on alternative development at the local and global level, including participation, community and indigenous knowledge, cultural heritage, and environmental justice.

### **ANTH 7250 - Comm Culture Evaluation**

**Credit Hours:** (3) **Description** Cultural perspectives on program evaluation in community settings; theoretical and methodological approaches to evaluation of human service

programs; culturally competent evaluations using ethnographic methods; role of anthropology in program evaluation at national and international levels.

**PREREQUISITE(S):** Non-majors must have permission of instructor.

### **ANTH 7255 - Applying Anthropology**

**Credit Hours:** (3) **Description** This course promotes the development of an engaged anthropological praxis through 1) surveying the history, ethics, and methods of applied anthropology, and 2) preparing for the implementation of successful practica that benefit both students and community partners. This course will review case studies of major applied projects to understand how people can make their training in anthropology work in a broad array of fields such as education, health and medicine, business and industry, environment, development, etc. The course focuses on the application of anthropological theories, methods, and ethics to students' own research trajectories, which they will plan and develop through course assignments. This course asks the following questions: What does it mean to be an applied, engaged, public, action, or activist anthropologist? What ethical issues need to be considered in anthropological application? How can anthropological theories, methods, and ethics be implemented through research design?

### **ANTH 7411 - Urban Anthropology in Mid-South**

**Credit Hours:** (3) **Description** Discussion and analysis of community economic development in the Mid-South region from prehistoric to present time; inter-relationship of cultural values, regional social structures and political economy in terms of international and national industrial trends.

### **ANTH 7510 - Studio in Applied Anthropology**

**Credit Hours:** (3) **Description** Community engaged, service learning and applied research; students will work as part of a research team on faculty projects and engage in mixed-methods research and analysis; focus of project will vary based on instructor's expertise, but topics will include research ethics, research design, participant observation, ethnographic interviewing, community mapping, and qualitative and quantitative data analysis. Course can be repeated one time, for up to 6 credit hours.

### **ANTH 7511 - Critically-Applied Medical Anthropology**

**Credit Hours:** (3) **Description** This course provides an overview of medical anthropology and considers its position within the discipline of anthropology and its utility for public health. In this course, students will gain ways to utilize ethnographic and qualitative data in health interventions, policy and evaluation. Students will gain critical skills in evaluating the adequacy and validity of formulations about "culture" and "tradition" in health programs and research, examine emic perceptions of disease, and consider the ways in which western science and biomedicine are themselves cultural constructs. This seminar explores the major theoretical lenses within medical anthropology with a particular focus on how medical anthropologists theorize the relationship between culture, structural violence, and health.

### **ANTH 7521 - Biocultural Epidemiology**

**Credit Hours:** (3) **Description** This course examines the intersection between epidemiology and medical anthropology, and the roles of anthropologists in public health research and policy settings. It examines differences and overlap in theoretical foundations and epistemologies between researchers in these fields, and considerations for successful collaboration. It also discusses the contributions of biological and cultural anthropologists to research on the sociocultural and environmental context of disease risk. Finally, it focuses on interpreting and critically-evaluating epidemiological studies.

### **ANTH 7590-7599 - Special Topics in Medical Anthropology**

**Credit Hours:** (3) **Description** Topics in Medical Anthropology. NOTE: No more than six hours may be counted toward degree requirements in Anthropology  
**PREREQUISITE(S):** Non-majors must have permission of instructor.

### **ANTH 7661 - Museum Practices \*\***

**Credit Hours:** (3) *Cross listing* (Same as ARTH 7661)  
**Description** Museum administration, finance, collection management, conservation, education, exhibition design, marketing, and visitor services. **PREREQUISITE(S):** Permission of instructor.

### **ANTH 7662 - Museums & Communities \*\***

**Credit Hours:** (3) *Cross listing* (Same as ARTH 7662)  
**Description** History and theory of museums, governance, audiences, and current topics in the profession.  
**PREREQUISITE(S):** Permission of instructor.

### **ANTH 7669 - Museum Internship \*\***

**Credit Hours:** (3-6) *Cross listing* (Same as ARTH 7669)  
**Description** Structured experience in selected aspects of museum practice. Includes 150 contract hours in museum and colloquium. May be repeated for a maximum of 6 credit hours  
**PREREQUISITE(S):** ANTH 7661, 7662 and/or permission of instructor

### **ANTH 7690-7699 - Special Topics in Applied Anthropology**

**Credit Hours:** (3) **Description** Topics vary and are announced in the online Course Listing. NOTE: No more than six hours may be counted toward degree requirements in Anthropology. **PREREQUISITE(S):** Non-majors must have permission of instructor.

### **ANTH 7970 - Directed Indiv Writing**

**Credit Hours:** (1-3) **Description** Intensive guided study of original data in areas selected by advanced students and accepted by the instructor; preparation of manuscripts for publication. **PREREQUISITE(S):** Permission of instructor  
Grades of A-F, or I will be given.

### **ANTH 7975 - Directed Indiv Reading**

**Credit Hours:** (1-3) **Description** Intensive guided study in areas selected by advanced students and accepted by the staff. **PREREQUISITE(S):** Permission of staff  
Grades of A-F, or I will be given.

### **ANTH 7980 - Directed Indiv Research**

**Credit Hours:** (1-3) **Description** Intensive guided study of original data in areas selected by advanced students and accepted by the staff; preparation for publication.  
**PREREQUISITE(S):** Permission of chair and the designated staff  
Grades of A-F, or I will be given.

### **ANTH 7985 - Practicum**

**Credit Hours:** (1-6) **Description** Training modules to plan, execute, document, and evaluate effective practicum assignments; supervised practical experience in the application of anthropological principles in an appropriate agency or organization. Emphasis placed on collaboration and engagement to benefit community partners, and on designing projects which strengthen skills, experience, and professionalism in applied anthropology. Course may be

repeated up to 3 times for credit. Grades of S, U, or IP will be given.

### **ANTH 8075 - Methods In Anthropology**

**Credit Hours:** (4) **Description** Critical examination of field methods and research designs in selected areas of anthropology; major trends in contemporary anthropological research as a preparation for applied research.

**PREREQUISITE(S):** Non-majors must have permission of instructor.

### **ANTH 8076 - Anth Data Analysis**

**Credit Hours:** (4) **Description** Construction and analysis of data bases developed from ongoing anthropological projects; review of frequently used statistical techniques in anthropological literature, hypothesis testing, and methods of presentation. **PREREQUISITE(S):** ANTH 7075 or permission of instructor.

### **ANTH 8200 - Roots of Anth Theory**

**Credit Hours:** (3) **Description** Growth of anthropology as a discipline and development of major theoretical paradigms; historical roots of contemporary anthropological theory; implications of theory for application and practice; designed and required for graduate anthropology students, but open to graduate students in other disciplines.

### **ANTH 8250 - Comm Culture Evaluation**

**Credit Hours:** (3) **Description** Cultural perspectives on program evaluation in community settings; theoretical and methodological approaches to evaluation of human service programs; culturally competent evaluations using ethnographic methods; role of anthropology in program evaluation at national and international levels.

**PREREQUISITE(S):** Non-majors must have permission of instructor.

### **ANTH 8521 - Biocultural Epidemiology**

**Credit Hours:** (3) **Description** Concepts and research uniting epidemiology and medical anthropology; explores epidemiologic web of agent, host, and environment in disease; stresses interplay of sociocultural, behavioral, and environmental risk factors; examines applications of epidemiology theory and methods to medical anthropology and global health policy.

### **ANTH 8975 - Directed Indiv Reading**

**Credit Hours:** (1-3) **Description** Intensive guided study in areas selected by advanced students and accepted by the staff.

**PREREQUISITE(S):** Permission of staff Grades of A-F, or I will be given.

### **ANTH 8980 - Directed Indiv Research**

**Credit Hours:** (1-3) **Description** Intensive guided study of original data in areas selected by advanced students and accepted by the staff; preparation for publication.

**PREREQUISITE(S):** Permission of chair and the designated staff Grades of A-F, or I will be given.

## **Applied Music**

### **MUAP 6004 - Orchestral Excerpts**

**Credit Hours:** (1-2) **Description** Study and performance of selected orchestral excerpts suitable for auditions.

### **MUAP 6111 - Applied Music Trumpet**

**Credit Hours:** (1-2)

### **MUAP 6121 - Horn**

**Credit Hours:** (1-2)

### **MUAP 6131 - Trombone**

**Credit Hours:** (1-2)

### **MUAP 6141 - Tuba**

**Credit Hours:** (1-2)

### **MUAP 6142 - Euphonium**

**Credit Hours:** (1-2)

### **MUAP 6260-6269 - Special Topics in Applied Music**

**Credit Hours:** (1-3) **Description** Selected topics in Applied Music. May be repeated with change of topics.

**MUAP 6301 - Acting for Opera I**

**Credit Hours:** (3) **Description** Essential acting techniques for singers, with special attention to application to operatic stage.

**MUAP 6302 - Acting for Opera II**

**Credit Hours:** (3) **Description** Advanced acting techniques for singers, with special attention to application to operatic stage.

**MUAP 6311 - Piano**

**Credit Hours:** (1-2)

**MUAP 6321 - Harpsichord**

**Credit Hours:** (1-2)

**MUAP 6331 - Organ**

**Credit Hours:** (1-2)

**MUAP 6411 - Percussion**

**Credit Hours:** (1-2)

**MUAP 6414 - Ethnic Percussion**

**Credit Hours:** (1-2)

**MUAP 6511 - Violin**

**Credit Hours:** (1-2)

**MUAP 6512 - Baroque Violin**

**Credit Hours:** (1-2)

**MUAP 6521 - Viola**

**Credit Hours:** (1-2)

**MUAP 6531 - Cello**

**Credit Hours:** (1-2)

**MUAP 6541 - Bass**

**Credit Hours:** (1-2)

**MUAP 6551 - Guitar**

**Credit Hours:** (1-2)

**MUAP 6561 - Harp**

**Credit Hours:** (1-2)

**MUAP 6571 - Viola da Gamba**

**Credit Hours:** (2) **Description** Applied Lessons in Viola da Gamba.

**MUAP 6611 - Voice**

**Credit Hours:** (1-2)

**MUAP 6711 - Flute**

**Credit Hours:** (1-2)

**MUAP 6721 - Oboe**

**Credit Hours:** (1-2)

**MUAP 6731 - Clarinet**

**Credit Hours:** (1-2)

**MUAP 6731 - Clarinet**

**Credit Hours:** (1)

**MUAP 6741 - Saxophone**

**Credit Hours:** (1-2)

**MUAP 6751 - Bassoon**

**Credit Hours:** (1-2)

**MUAP 6761 - Recorder**

**Credit Hours:** (1-2)

**MUAP 7002 - Chamber Music (1)****MUAP 7099 - Chamber Music Recital**

**Credit Hours:** (1) **Description** Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

**MUAP 7101 - Wind Ensemble**

**Credit Hours:** (1)

**MUAP 7102 - Orchestra**

**Credit Hours:** (1)

**MUAP 7103 - University Singers**

**Credit Hours:** (1)

**MUAP 7104 - Opera Chorus**

**Credit Hours:** (1)

**MUAP 7106 - Symphonic Band**

**Credit Hours:** (1)

**MUAP 7107 - Jazz Ensemble**

**Credit Hours:** (1)

**MUAP 7108 - Opera Workshop**

**Credit Hours:** (1)

**MUAP 7111 - Trumpet**

**Credit Hours:** (2-6)

**MUAP 7121 - Horn**

**Credit Hours:** (2-6)

**MUAP 7131 - Trombone**

**Credit Hours:** (2-6)

**MUAP 7141 - Tuba**

**Credit Hours:** (2-6)

**MUAP 7142 - Euphonium**

**Credit Hours:** (2-6)

**MUAP 7201 - Brass Ensemble**

**Credit Hours:** (1)

**MUAP 7202 - Jazz Combo**

**Credit Hours:** (1)

**MUAP 7203 - Chamber Music/Piano**

**Credit Hours:** (1)

**MUAP 7204 - Percussion Ensemble**

**Credit Hours:** (1)

**MUAP 7205 - Contmp Chamber Players**

**Credit Hours:** (1)

**MUAP 7207 - String Ensemble**

**Credit Hours:** (1)

**MUAP 7209 - Chamber Choir**

**Credit Hours:** (1)

**MUAP 7210 - Opera Soloists**

**Credit Hours:** (1)

**MUAP 7211 - Woodwind Ensemble**

**Credit Hours:** (1)

**MUAP 7212 - Collegium Musicum**

**Credit Hours:** (1)

**MUAP 7213 - Jazz Vocal Ensemble**

Credit Hours: (1)

**MUAP 7214 - Tuba Ensemble**

Credit Hours: (1)

**MUAP 7215 - Trumpet Ensemble**

Credit Hours: (1)

**MUAP 7216 - Community Chamber Music**

**Credit Hours:** 1 **Description** Study and performance of chamber music repertory with a strong emphasis on community engagement and interaction. 8

**MUAP 7260-7289 - Special Topics in Applied Music**

**Credit Hours:** (1-3) **Description** Selected topics in Applied Music. May be repeated with change of topic.

**MUAP 7311 - Piano**

Credit Hours: (2-6)

**MUAP 7321 - Harpsichord**

Credit Hours: (2-6)

**MUAP 7331 - Organ**

Credit Hours: (2-6)

**MUAP 7411 - Percussion**

Credit Hours: (2-6)

**MUAP 7505 - Cello Ensemble**

**Credit Hours:** 1 **Description** Study and performance of works for cello ensemble. Open to music majors and non-majors through audition. 8 **PREREQUISITE(S)** or **COREQUISITE(S)**: MUAP 6531, 7531, or 8531

**MUAP 7506 - Trombone Ensemble**

Credit Hours: (1)

**MUAP 7511 - Violin**

Credit Hours: (2-6)

**MUAP 7521 - Viola**

Credit Hours: (2-6)

**MUAP 7531 - Cello**

Credit Hours: (2-6)

**MUAP 7541 - Bass**

Credit Hours: (2-6)

**MUAP 7551 - Guitar**

Credit Hours: (2-6)

**MUAP 7561 - Harp**

Credit Hours: (2-6)

**MUAP 7600 - Experiential Learning Credit**

**Credit Hours:** (1-9) **Description** A systematic process for evaluating and credentialing graduate-level learning gained in a variety of contexts. Credit determined by faculty assessor.

**MUAP 7611 - Voice**

Credit Hours: (2-6)

**MUAP 7620 - Ind Study Sym/Op Cond**

**Credit Hours:** (3) **Description** Detailed study of advanced conducting techniques including styles, mechanics, score reading and preparation, and rehearsal techniques and organization; practical experience in orchestral and operatic conducting. May be repeated for credit

**MUAP 7620 - Ind Study Sym/Op Cond**

**Credit Hours:** (3) **Description** Detailed study of advanced conducting techniques including styles, mechanics, score

reading and preparation, and rehearsal techniques and organization; practical experience in orchestral and operatic conducting. May be repeated for credit. **PREREQUISITE(S):** MUAP 7701 and/or permission of instructor.

### **MUAP 7622 - Opera Direction Project**

**Credit Hours:** (1-3) **Description** Stage direction of an opera workshop or opera theatre production. May be repeated for up to 12 credit hours. Grades of S, U, or IP will be given. May be repeated for up to 12 credit hours Grades of S, U, or IP will be given.

### **MUAP 7623 - Opera Coaching Project**

**Credit Hours:** (1-3) **Description** Supervised coaching of substantial portions of an opera workshop or opera theatre production. May be repeated for up to 12 credit hours. May be repeated for up to 12 credit hours.

### **MUAP 7701 - Conducting**

**Credit Hours:** (2-6) **Description** Conducting the concert band, the symphony orchestra, and the chorus in the larger musical forms; emphasis on interpretation. \$250.00 instruction and lab fee. May be repeated for credit.

### **MUAP 7702 - Conducting Practicum**

**Credit Hours:** (1-3) **Description** Supervised rehearsal and preparation of a public performance with a large ensemble.

### **MUAP 7703 - Score Study/Aural Train**

**Credit Hours:** (2) **Description** Skills of score reading, ear training, and score analysis for conductors.

### **MUAP 7704 - Opera Stage Direction**

**Credit Hours:** (1-3) **Description** Private lessons in the stage direction of operatic productions. May be repeated for up to 12 credit hours. May be repeated for up to 12 credit hours.

### **MUAP 7705 - Opera Coaching**

**Credit Hours:** (1-3) **Description** Private lessons in opera coaching. May be repeated for up to 12 credit hours. May be repeated for up to 12 credit hours

### **MUAP 7711 - Flute**

**Credit Hours:** (2-6)

### **MUAP 7721 - Oboe**

**Credit Hours:** (2-6)

### **MUAP 7731 - Clarinet**

**Credit Hours:** (2-6)

### **MUAP 7741 - Saxophone**

**Credit Hours:** (2-6)

### **MUAP 7751 - Bassoon**

**Credit Hours:** (2-6)

### **MUAP 7800 - Internship/Music Perform**

**Credit Hours:** (1-6) **Description** Music performances coordinated between the School of Music and Opera Memphis or the Memphis Symphony Orchestra. May be repeated. Grades of S/U, IP will be given. May be repeated Grades of S/U, IP will be given.

### **MUAP 7801 - Independent Study**

**Credit Hours:** (1-3) **Description** Individual Research, under faculty supervision, on a selected topic in Applied Music. May be repeated when the topic varies. May be repeated when the topic varies

### **MUAP 7802 - Career Resources for Musicians**

**Credit Hours:** (3) **Description** This course will cover career-related writing skills, including bios, resumes, and grants, in addition to giving students an experiential learning environment to create a practical toolbox for their professional musical life.

### **MUAP 7899 - Lecture Recital**

**Credit Hours:** (1-3) **Description** Student must be concurrently enrolled in an appropriate applied music course. All policies relating to dissertations are applicable to lecture recitals. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.



**MUAP 7999 - Recital**

**Credit Hours:** (1-3) **Description** Student must be concurrently enrolled in an appropriate applied music course. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

**MUAP 8002 - Sem Performance Prob**

**Credit Hours:** (3) **Description** Study of literature and material for the performances necessary to prepare for the qualifying examination. Preparation of the dissertation recitals. May be repeated for credit.

**MUAP 8111 - Trumpet**

**Credit Hours:** (2-6)

**MUAP 8121 - Horn**

**Credit Hours:** (2-6)

**MUAP 8131 - Trombone**

**Credit Hours:** (2-6)

**MUAP 8141 - Tuba**

**Credit Hours:** (2-6)

**MUAP 8142 - Euphonium**

**Credit Hours:** (2-6)

**MUAP 8260-8289 - Special Topics in Applied Music**

**Credit Hours:** (1-3) **Description** Selected topics in Applied Music. May be repeated with change of topic.

**MUAP 8311 - Piano**

**Credit Hours:** (2-6)

**MUAP 8321 - Harpsichord**

**Credit Hours:** (2-6)

**MUAP 8331 - Organ**

**Credit Hours:** (2-6)

**MUAP 8411 - Percussion**

**Credit Hours:** (2-6)

**MUAP 8511 - Violin**

**Credit Hours:** (2-6)

**MUAP 8521 - Viola**

**Credit Hours:** (2-6)

**MUAP 8531 - Cello**

**Credit Hours:** (2-6)

**MUAP 8541 - Bass**

**Credit Hours:** (2-6)

**MUAP 8551 - Guitar**

**Credit Hours:** (2-6)

**MUAP 8600 - Experiential Learning Credit**

**Credit Hours:** (1-9) **Description** A systematic process for evaluating and credentialing graduate-level learning gained in a variety of contexts. Credit determined by faculty assessor.

**MUAP 8611 - Voice**

**Credit Hours:** (2-6)

**MUAP 8620 - Ind Study Sym/Op Cond**

**Credit Hours:** (3) **Description** Detailed study of advanced conducting techniques including styles, mechanics, score reading and preparation, and rehearsal techniques and organization; practical experience in orchestral and operatic conducting. May be repeated for credit. May be repeated for credit

**MUAP 8622 - Ind Proj Opera Direct**

**Credit Hours:** (3) **Description** Actual staging or musical direction of an opera workshop or opera theatre production. May be repeated for credit. May be repeated for credit.

### **MUAP 8701 - Conducting**

**Credit Hours:** (2-6) **Description** Conducting the concert band, the symphony orchestra, and the chorus in the larger musical forms; emphasis on interpretation. \$250.00 instruction and lab fee. May be repeated for credit.

### **MUAP 8702 - Conducting Practicum**

**Credit Hours:** (1-3) **Description** Supervised rehearsal and preparation of a public performance with a large ensemble.

### **MUAP 8703 - Score Study/Aural Train**

**Credit Hours:** (2) **Description** Skills of score reading, ear training, and score analysis for conductors.

### **MUAP 8711 - Flute**

**Credit Hours:** (2-6)

### **MUAP 8721 - Oboe**

**Credit Hours:** (2-6)

### **MUAP 8731 - Clarinet**

**Credit Hours:** (2-6) **COREQUISITE(S):** JOUR 4629. Permission of Department required for registration.

### **MUAP 8731 - Clarinet**

**Credit Hours:** (2-6)

### **MUAP 8741 - Saxophone**

**Credit Hours:** (2-6)

### **MUAP 8751 - Bassoon**

**Credit Hours:** (2-6)

### **MUAP 8800 - Internship/Music Perform**

**Credit Hours:** (1-6) **Description** Music performances coordinated between the School of Music and Opera Memphis or the Memphis Symphony Orchestra. May be repeated. Grades of A-F, or IP will be given. May be repeated Grades of A-F, or IP will be given.

### **MUAP 8801 - Independent Study**

**Credit Hours:** (1-3) **Description** Individual Research, under faculty supervision, on a selected topic in Applied Music. May be repeated when the topic varies. May be repeated when the topic varies.

### **MUAP 8802 - Career Resources for Musicians**

**Credit Hours:** (3) **Description** This course will cover career-related writing skills, including bios, resumes, and grants, in addition to giving students an experiential learning environment to create a practical toolbox for their professional musical life.

### **MUAP 8999 - Recital**

**Credit Hours:** (1-3) **Description** Student must be concurrently enrolled in an appropriate applied music course. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

### **MUAP 9000 - Doctoral Research Project**

**Credit Hours:** (1-9) **Description** Preparation of the research document as part of the dissertation equivalent; may include a lecture recital or specialized project. All policies relating to dissertations are applicable to the course. Continuous enrollment is required until degree is completed. S/U/IP

## **Architecture**

### **ARCH 6021 - Architecture Independent Study**

**Credit Hours:** (1-3) **Description** Independent research in selected area of architecture under supervision of architecture faculty. May be repeated for a maximum of 6 credit hours in increments of 1, 2, or 3 credit hours **PREREQUISITE(S):** Permission of instructor.

### **ARCH 6022 - Architecture+Urbanism Seminar**

**Credit Hours:** (3) **Description** Review of contemporary concepts in architectural design in the context of the urban environment; attitudes and phenomena making the particular culture of today and their impact on the built environment. **PREREQUISITE(S):** Permission of instructor.

### **ARCH 6023 - Urban Design Seminar**

**Credit Hours:** (3) **Description** Comprehensive overview of significant issues of contemporary urban design; emphasis on experiential nature of cities and role of the architect in urban design. **PREREQUISITE(S):** Permission of instructor.

### **ARCH 6221 - Determinants of Modern Design**

**Credit Hours:** (3) **Description** Significant works of architecture and urban design from 1900 to present; focus on Europe, the US, and non-Western world; examines architecture as a mode of cultural production in relation to its aesthetic. **PREREQUISITE(S):** ARCH 1211, 1212, or equivalent.

### **ARCH 6231 - Issues in City Building**

**Credit Hours:** (3) **Description** Review of historical and contemporary issues in architecture, urban design, planning, and real estate development within the context of urban environment. **PREREQUISITE(S):** permission of instructor.

### **ARCH 6421 - Sustainable Design**

**Credit Hours:** (3) **Description** Principles of sustainable design as it relates to architecture and interior design. Topics include successful integration of sustainable design principles into building solutions; systematic evaluation of various design strategies in order to determine the most appropriate application. **PREREQUISITE(S):** permission of instructor.

### **ARCH 6430 - Internship in Architecture**

**Credit Hours:** (1-6) **Description** Experiential learning to be achieved through an approved work assignment with a design firm, appropriate public or private entity, or a Department of Architecture faculty member. **PREREQUISITE(S):** permission of instructor.

### **ARCH 6451 - Site+Environmental Planning**

**Credit Hours:** (3) **Description** Building sites; selection and utilization, including environmental influences; technical aspects such as zoning, contour lines, parking, ingress/egress, site drainage, building location, and sustainable design. **PREREQUISITE(S):** Permission of instructor.

### **ARCH 6614 - Advanced Visual Communication**

**Credit Hours:** (3) Former: 6613 **Description** Advanced design, modeling, and analytical concepts using various computer software programs. **PREREQUISITE(S):** Permission of instructor.

### **ARCH 6811 - Parameters in Architecture Studio**

**Credit Hours:** (3-6) **Description** Comprehensive overview of differences and relationships of history, technology, and culture in terms of impact on architecture and urban design; concepts of form generation and historic dimensions of architecture with respect to human settlement. May be repeated for a maximum of 6 hours when topic changes. **PREREQUISITE(S):** Permission of instructor.

### **ARCH 6812 - Furniture Design Studio**

**Credit Hours:** (4) **Description** Examination of the historical precedents in modern style and the place of furniture in architecture; design philosophy, expression of materials, and construction. **PREREQUISITE(S):** Permission of instructor.

### **ARCH 6821 - Urban Design Studio**

**Credit Hours:** (6) **Description** Comprehensive overview of significant issues of contemporary urban design; emphasis on experiential nature of cities, role of public policy, and genesis and development of urban building types. **PREREQUISITE(S):** Permission of instructor.

### **ARCH 6822 - Architecture+Urbanism Studio**

**Credit Hours:** (6) **Description** Advanced design studio for identifying needs, resources, and operational methodologies across an expanded range of environmental scales; methods for identifying socio-cultural needs and coordination of complex variables, information, and resources, leading to conceptualization and development of design of components of the built environment.

### **ARCH 6823 - Design Collaborative Studio 1**

**Credit Hours:** (3-6) **Description** Critical study of a defined community challenge that incorporates knowledge and skills from a variety of disciplines; conduct best practice research within and across disciplines. The purpose of this course is to support community engagement activities of the University of Memphis Design Collaborative (UMDC). May be repeated for a maximum of 6 credit hours **PREREQUISITE(S):** Permission of instructor.

### **ARCH 6824 - Design Collaborative Studio 2**

**Credit Hours:** (3-6) **Description** Critical study of a defined community challenge that incorporates knowledge and skills from a variety of disciplines; conduct best practice research within and across disciplines. The purpose of this course is to support community engagement activities of the University of Memphis Design Collaborative (UMDC). May be repeated for a maximum of 6 credit hours **PREREQUISITE(S):** Permission of instructor.

### **ARCH 6825 - Design+Build Studio**

**Credit Hours:** (1-6) **Description** Collaborative research with faculty, students and community stakeholders; integration of concepts and methods as applied to building types, design, construction; site analysis and development of design solutions for community engagement project(s). May be repeated by permission for a maximum of 6 credit hours. **PREREQUISITE(S):** permission of instructor.

### **ARCH 6833 - Architectural Illustration**

**Credit Hours:** (3) **Description** Basics of phenomenological theory as it applies to design communication; techniques of observational analysis; skills in applied color theory, perspective drawing, compositional refinement, and characteristics of materials and light; precedents of representation; graphic and verbal presentation. **PREREQUISITE(S):** permission of instructor.

### **ARCH 6841 - Studio Study Abroad**

**Credit Hours:** (3-9) **Description** Comparative studies of cultures; relationships of culture to physical environment, organization of cities; history and behavior of inhabitants; analysis and documentation of elements of physical environment and relationship between buildings and urban fabric. **PREREQUISITE(S):** Permission of instructor.

### **ARCH 7011 - Advanced Design Seminar 1**

**Credit Hours:** (3) **Description** Offered in conjunction with advanced studio problems in architecture; changing topics address a variety of critical and ideological constructs; emphasizes life-safety, building envelope and service systems, materials and assemblies. **PREREQUISITE:** Permission of Instructor. **PREREQUISITE(S):** Permission of Instructor

### **ARCH 7012 - Advanced Design Seminar 2**

**Credit Hours:** (3) **Description** Advanced studio problems in architecture; changing topics address a variety of critical and ideological constructs; emphasizes structural and environmental issues as design determinants. **PREREQUISITE:** Permission of Instructor. **PREREQUISITE(S):** Permission of Instructor.

### **ARCH 7013 - Advanced Design Seminar 3**

**Credit Hours:** (3) **Description** Offered in conjunction with advanced studio problems in architecture; changing topics address a variety of critical and ideological constructs; emphasizes comprehensive design. **PREREQUISITE:** Permission of Instructor. **PREREQUISITE(S):** Permission of Instructor

### **ARCH 7021 - Architecture Independent Study**

**Credit Hours:** (1-3) **Description** Independent research in selected area of architecture under supervision of architecture faculty. May be repeated for a maximum of 6 credit hours in increments of 1, 2, or 3 credit hours **PREREQUISITE(S):** Permission of instructor Grades of A-F, or IP will be given.

### **ARCH 7031 - Research and Training**

**Credit Hours:** (1-3) **Description** Collaborative research with faculty in selected areas of architecture. The primary goal of the course is to learn about common research methods used in the design fields and to develop skills in written communication of such research.

### **ARCH 7211 - Contemporary Arch Theory**

**Credit Hours:** (3) **Description** Critical study of contemporary theoretical writings and related architectural production; contemporary issues informing current architectural discourse; the Modernist canon and -isms" from the mid-twentieth century to the present."

## ARCH 7222 - Contemporary Architecture 2

**Credit Hours:** (3) **Description** This course investigates the state of contemporary architecture as represented by significant practices, buildings, theories and criticisms. Themes to be considered include the ethics and aesthetics of sustainability, contemporary urbanism and new approaches to materials and structure.

## ARCH 7232 - Advanced Issues City Building

**Credit Hours:** (3) **Description** Analysis and understanding of the qualities of the existing physical environment, natural and built, and social and economic issues within the context of the urban environment. **PREREQUISITE(S):** Permission of instructor.

## ARCH 7421 - Advanced Environmental Systems

**Credit Hours:** (3) **Description** Advanced principles, appropriate applications and performance of environmental systems; acoustical, lighting, climate modification systems, and energy use integrated with the building envelope. **PREREQUISITE(S):** ARCH 3421 (or approved equivalent) or permission of instructor.

## ARCH 7430 - Internship in Architecture

**Credit Hours:** (1-6) **Description** Experiential learning to be achieved through an approved work assignment with a design firm, appropriate public or private entity, or a Department of Architecture faculty member. **PREREQUISITE(S):** Permission of instructor.

## ARCH 7431 - Advanced Professional Practice

**Credit Hours:** (3) **Description** Principles of practice including communication skills, technical documentation, financial consideration, human behavior, client role, project management, practice management, leadership, legal responsibilities, ethics and professional judgment, and community and social responsibilities. **PREREQUISITE(S):** permission of instructor.

## ARCH 7511 - Urban Design Strategies Semn

**Credit Hours:** (3)

## ARCH 7512 - Urbanism/Suburban Rev Studio

**Credit Hours:** (6)

## ARCH 7711 - Advanced Design Studio 1

**Credit Hours:** (6) **Description** Advanced studio problems in architecture; changing topics address a variety of critical and ideological constructs; emphasizes life-safety, building envelope and service systems, materials and assemblies. **COREQUISITE:** ARCH 7011. **COREQUISITE(S):** ARCH 7011.

## ARCH 7712 - Advanced Design Studio 2

**Credit Hours:** (6) **Description** Advanced studio problems in architecture; changing topics address a variety of critical and ideological constructs; emphasizes structural and environmental issues as design determinants. **PREREQUISITE(S):** ARCH 7711, ARCH 7011; **COREQUISITE(S):** ARCH 7012.

## ARCH 7713 - Advanced Design Studio 3

**Credit Hours:** (6) **Description** Advanced studio problems in architecture; changing topics address a variety of critical and ideological constructs; emphasizes comprehensive design. **COREREQUISITE:** ARCH 7013. **COREQUISITE(S):** ARCH 7013.

## ARCH 7833 - Experiential Drawing Studio

**Credit Hours:** (3) **Description** Phenomenological theory as it applies to design communication and pedagogy; narrative compositional refinement; precedents of representation; aesthetic theory of depiction and representation. **PREREQUISITE(S):** Permission of instructor.

## ARCH 7930 - Architecture Research

**Credit Hours:** (3) **Description** Study in research in a specific area culminating in an integrating experience through individual project; research techniques, preliminary research, and conceptual development of an architectural project; site analysis and selection, case studies; development of thesis or professional project proposal. **PREREQUISITE(S):** Permission of instructor. Grades of A-F, or IP will be given.

### **ARCH 7994 - Architecture Design-Research Studio**

**Credit Hours:** 6 **Description** Emphasizes comprehensive architectural integration of creative research and design under the direction of architecture faculty, based on the individual interest of the student. \$30 per credit hour  
**PREREQUISITE(S):** ARCH 7930

### **ARCH 7995 - Professional Project Studio**

**Credit Hours:** (6) **Description** Studio research problems in architecture; changing topics address a variety of critical and ideological constructs; emphasizes creative professional research and design in a course of study developed with architecture faculty based on the individual research interest of the student. **PREREQUISITE(S):** ARCH 7930, permission of instructor.

### **ARCH 7996 - Architecture Thesis Studio**

**Credit Hours:** (1-6) **Description** Emphasizes comprehensive integration of disciplinary and professional skills through formulation of architectural propositions grounded in theoretical, critical, and creative research.  
**PREREQUISITE(S):** ARCH 7930. Grades of S, U, or IP will be given.

## **Art**

### **ART 6010-6019 - Special Topics in Studio Art**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in online class listings. May be repeated to a maximum of 9 hours when topic varies.

### **ART 6020-6029 - Special Topics in Art Education**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in online class listings. May be repeated to a maximum of 9 hours when topic varies.

### **ART 6169 - Mural Painting as Public Art**

**Credit Hours:** (3) **Description** Fundamental principles of painting in the creation of indoor and outdoor murals; various techniques specific to mural painting and the design and creation of murals.

### **ART 6211 - Writing/Design Process**

**Credit Hours:** (3) **Description** Focus on synthesis of verbal and visual problem-solving methods and use of writing as an integral phase of design process. **PREREQUISITE(S):** ART 3213 and 3222 or permission of instructor.

### **ART 6220 - Print Communication Design**

**Credit Hours:** (3) **Description** Practical problems in the areas of publication, information, corporate, and promotional design.

### **ART 6223 - Special Studies/Graphic Des**

**Credit Hours:** 3 **Description** Advanced instruction in electronic imaging, typography, and publication design, 3-dimensional design, corporate and promotional design, or information graphics.

### **ART 6224 - History Graphic Design**

**Credit Hours:** (3) **Description** Cultural, theoretical, and stylistic aspects of major movements in field of graphic design in Europe and America from the Industrial Revolution to present. **PREREQUISITE(S):** Admission to Graphic Design concentration.

### **ART 6314 - Art of The Book**

**Credit Hours:** (3) **Description** Comprehensive study of skills and processes involved in design of traditional and non-traditional book formats; investigates history of the book, the book as aesthetic object and as vehicle for creative expression. **PREREQUISITE(S):** ART 3313, 3314, or permission of instructor.

### **ART 6321 - Drawing & Painting I**

**Credit Hours:** (3) **Description** An advanced course in drawing and painting methods with emphasis on transparent watercolor.

### **ART 6322 - Drawng & Paintng II**

**Credit Hours:** (3) **Description** A continuation of Art 6321 with attention given to various mixed media.

### **ART 6331 - Painting III**

**Credit Hours:** (3) **Description** Advanced problems in oil painting, presupposing that the student has mastered basic techniques and is ready for a more experimental approach to the subject.

### **ART 6332 - Painting IV**

**Credit Hours:** (3) **Description** A continuation of Art 6331 with emphasis on development of a personal style.

### **ART 6333 - Painting V**

**Credit Hours:** (3) **Description** Continuation of ART 6332; emphasis on development of personal style.  
**PREREQUISITE(S):** ART 6332 or permission of instructor.

### **ART 6351 - Adv Printmaking I**

**Credit Hours:** (3) **Description** Specialization in one or two printmaking media with emphasis on development of personal imagery and technical skills.

### **ART 6352 - Adv Printmaking II**

**Credit Hours:** (3) **Description** Advanced work in one or two printmaking media with continued development of personal imagery and advanced technical skills.

### **ART 6353 - Com Image Prnt/Photo I**

**Credit Hours:** (3) **Description** Use of digital imaging in one of several output options including inkjet printing, lithography, screen printing, etching, silver and non-silver photographic processes; emphasis on personal expression.  
**PREREQUISITE(S):** Computer course and either ART 2351 or 2701.

### **ART 6354 - Com Imag Prnt/Photo II**

**Credit Hours:** (1-3) **Description** Advanced project using digital imaging; proposal for study to be approved in advance; emphasis on personal expression. May be repeated to a maximum of 6 hours **PREREQUISITE(S):** ART 6353 or permission of instructor.

### **ART 6410 - Art Educ Independ Study**

**Credit Hours:** (1-3) **Description** Theoretical and pragmatic ideas relevant to teaching of art. May be repeated for a maximum of 6 credit hours.

### **ART 6440 - Analysis of Teaching**

**Credit Hours:** (4) **Description** Advanced methods for art teaching practices in schools. **PREREQUISITE(S):** admission to TEP.

### **ART 6511 - Sculpture IV**

**Credit Hours:** (3) **Description** Advanced work in various sculptural media.

### **ART 6512 - Sculpture V**

**Credit Hours:** (3) **Description** A continuation of ART 6511 with emphasis on personal expression.

### **ART 6521 - Ceramics III**

**Credit Hours:** (3) **Description** Introduction to pottery-making, including hand forming and production processes using clays, plaster, and cements.

### **ART 6560 - Interactive Media Design**

**Credit Hours:** (3) **Description** Introduction to time-based, electronic media in graphics design, impact of electronic interface on visual communication; emphasis on visual design of narrative, commercial, editorial and/or educational multimedia presentations on computer. **PREREQUISITE(S):** ART 3222, 3227, 4220, 4500, 3210 or Permission of Instructor.

### **ART 6621 - Workshop In Art I**

**Credit Hours:** (1-3) **Description** Specific art problems as they apply to the individual student; emphasis on basic art concepts and creative experience.

### **ART 6622 - Workshop In Art II**

**Credit Hours:** (1-3) **Description** Continuation of ART 6621, providing study of problems appropriate to needs of the individual student.

### **ART 6641 - Study & Travel Art**

**Credit Hours:** (3-6) **Description** Travel to important art areas of the world with specialized study under direction of departmental faculty member; research problem assigned and evaluated by major professor required.

### **ART 6650 - Profess Art Practices**

**Credit Hours:** (3) **Description** Development of skills needed for success as practicing professional artist, including portfolio preparation and presentation, marketing, contracts, copyrights, and alternative art careers.

### **ART 6701 - Color Photography**

**Credit Hours:** (3) **Description** Exploration of photographic perception in color; survey of the history and aesthetics of color photography; techniques of color photography with emphasis on color printing. **PREREQUISITE(S):** ART 2702 or ART 6002 or permission of instructor.

### **ART 6702 - Photogrphc Mat/Process**

**Credit Hours:** (3) **Description** Primarily an advanced technical course exploring the creative potential in various contemporary photographic materials, processes, and techniques; emphasis on aesthetic application of those materials and techniques. **PREREQUISITE(S):** ART 2702 or ART 6002 or permission of instructor.

### **ART 6703 - Altn Photogrphc Process**

**Credit Hours:** (3) **Description** Creative potential of archaic and non-traditional photographic processes such as Cyanotype, Gum Bichromate, and Kwik-Print. **PREREQUISITE(S):** ART 2702 or permission of instructor.

### **ART 6704 - Photographic Lighting**

**Credit Hours:** (3) **Description** Advanced theory, technique, and equipment used by professional photographers for black and white and color; emphasis on aesthetic application in actual practice. **PREREQUISITE(S):** ART 2702 or permission of instructor.

### **ART 6912 - Art Education Residency II**

**Credit Hours:** (9) **Description** Implementing various methodologies, assessing students, classroom management, and classroom discipline. **PREREQUISITE(S):** admission to TEP.

### **ART 6914 - Art Education Residency I**

**Credit Hours:** (5) **Description** Implementing various methodologies, assessing students, classroom management,

and classroom discipline. **PREREQUISITE(S):** admission to TEP.

### **ART 7010-7019 - Special Topics in Studio Art**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in online class listings. May be repeated for a maximum of 9 credit hours when topics varies.

### **ART 7020-7029 - Special Topics in Art Education**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in online class listings. May be repeated for a maximum of 9 credit hours when topics varies.

### **ART 7040 - Problems Graphic Design**

**Credit Hours:** (3) **Description** Issues, theory, and methodology for graphic designers; research of assigned topic, class discussions, and studio projects. May be repeated for maximum of 12 hours when topics vary. Grades of A-F, or IP will be given.

### **ART 7200 - Photography Seminar**

**Credit Hours:** (3) **Description** Self-assigned visual/conceptual photographic problem in which journal is kept; group critiques and some seminar activities. May be repeated for a maximum of 6 hours.

### **ART 7201 - Adv Research Phtgrphy**

**Credit Hours:** (3) **Description** Independent work and research in photography. May be repeated for a maximum of 9 credit hours. **PREREQUISITE(S):** Permission of instructor. Grades of A-F, or IP will be given.

### **ART 7240 - Visual Communctn Resrch**

**Credit Hours:** (3) **Description** Group discussion and criticism of individual study problems; emphasis on independent studio research projects as related to general topic in visual communication.

### **ART 7330 - Studies/Two Dimen Media**

**Credit Hours:** (1-12) **Description** Exploration of an original visual arts idea in two-dimensional media. May be repeated



for a maximum of 12 hours credit depending upon recommendation of advisor. Grades of A-F, or IP will be given.

### **ART 7411 - Methods for Elem Art**

**Credit Hours:** (3) **Description** Introduction to skills, methods, and content for teaching a comprehensive art education program in an elementary setting; includes studio and art appreciation activities, emphasizing materials and methods for children's art expression and development. **NOTE:** May include field experience and background check at student's expense.

### **ART 7420 - Meth K-12 Art Instruct**

**Credit Hours:** (2) **Description** Instructional planning, implementation, and evaluation applied to elementary and secondary school art programs.

### **ART 7421 - Positive Yth Devlp thru Arts**

**Credit Hours:** (3) **Description** Introduction to an asset or strength-based model for promoting positive youth development; investigates exemplary models of collaborative, interdisciplinary, cross-cultural creative arts programs for urban youth; students submit a process portfolio documenting their experiences. **PREREQUISITE(S):** Permission of instructor.

### **ART 7423 - Methods Art Second Schools**

**Credit Hours:** (3) **Description** Studio activities and related art education issues relevant to artistic development of adolescents; emphasizes multicultural concerns, practical classroom management skills, and a variety of art teaching methods and evaluation systems. **NOTE:** May require fieldwork and background check at student's expense. **PREREQUISITE(S):** Permission of instructor.

### **ART 7441 - Art Educ Prof Seminar**

**Credit Hours:** (3) **Description** Development of effective practices for art education; includes analysis and problem solving of art student teaching experience, and creation of professional portfolio. **PREREQUISITE(S):** Completion of all other licensure and degree requirements **COREQUISITE(S):** ICL 7912.

### **ART 7550 - Studies/Three Dim Media**

**Credit Hours:** (1-12) **Description** Exploration of an original visual arts idea in three-dimensional media. May be repeated for a maximum of 12 hours credit depending upon recommendation of advisor. Grades of A-F, or IP will be given.

### **ART 7640 - Studies Computr Animtn**

**Credit Hours:** (3) **Description** Advanced techniques and principles of visual communication in the video animation format. **PREREQUISITE(S):** permission of instructor.

### **ART 7651 - Graduate Studio Sem**

**Credit Hours:** (1) **Description** Student presentation and discussion of current studio work in ceramics, painting, photography, printmaking, and/or sculpture courses at the 6000 or 7000 level. May be repeated once per semester for a maximum of 12 credit hours. Grades of S, U, or IP will be given.

### **ART 7660 - Direct Ind Study**

**Credit Hours:** (1-12) **Description** Individual investigation of special research problems or projects. May be repeated for a maximum of 12 hours credit upon recommendation of advisor. Grades of A-F, or IP will be given.

### **ART 7710 - Indep Studies B/W Photo**

**Credit Hours:** (3) **Description** Independent exploration of original black and white photographic art ideas and studio techniques. May be repeated for maximum of 6 hours upon recommendation of advisor. Grades of A-F, or IP will be given.

### **ART 7711 - Adv Photography Semnr**

**Credit Hours:** (3) Former: (6711) **Description** (6711) Emphasis on finding a personal direction within the student's work, pursuing that direction, and discussing it in class critiques. **PREREQUISITE(S):** ART 7003 or permission of instructor.

### **ART 7712 - Photo Portfolio Sem**

**Credit Hours:** (3) Former: (6712) **Description** (6712) Student must produce a book of photographs or portfolio (bound by student) that represents a coherent, in-depth picture statement. **PREREQUISITE(S):** ART 7711.

### **ART 7770 - Studies Mixed Media**

**Credit Hours:** (1-12) **Description** Explorations of an original visual arts idea in mixed media. May be repeated for a maximum of 12 hours credit upon recommendation of advisor. Grades of A-F, or IP will be given.

### **ART 7996 - Thesis**

**Credit Hours:** (1-6) **Description** Preparation and defense of a thesis prepared under direction of major professor. Studio Art thesis requires an exhibition. Grades of S, U, or IP will be given.

### **ART 8010-8019 - Special Topics in Studio Art**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in online class listings. May be repeated for a maximum of 9 credit hours when topics vary.

### **ART 8020-8029 - Special Topics in Art Education**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in online class listings. May be repeated for a maximum of 9 credit hours when topics vary.

### **ART 8201 - Adv Research Phtgrphy**

**Credit Hours:** (3) **Description** Independent work and research in photography. May be repeated for a maximum of 9 credit hours. **PREREQUISITE(S):** Permission of instructor. Grades of A-F, or IP will be given.

### **ART 8330 - Studies/Two Dimen Media**

**Credit Hours:** (1-12) **Description** Exploration of an original visual arts idea in two-dimensional media. May be repeated for a maximum of 12 hours credit depending upon recommendation of advisor. Grades of A-F, or IP will be given.

### **ART 8550 - Studies/Three Dim Media**

**Credit Hours:** (1-12) **Description** Exploration of an original visual arts idea in three-dimensional media. May be repeated for a maximum of 12 hours credit depending upon recommendation of advisor. Grades of A-F, or IP will be given.

### **ART 8660 - Direct Ind Study**

**Credit Hours:** (1-12) **Description** Individual investigation of special research problems or projects. May be repeated for a maximum of 12 hours credit upon recommendation of advisor. Grades of A-F, or IP will be given.

## **Art History**

### **ARTH 6030-6039 - Special Topics in Art History**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in online class listings. May be repeated to a maximum of 9 hours when topic varies.

### **ARTH 6111 - Art/Arch Egypt**

**Credit Hours:** (3) **Description** Pre-dynastic to Late Period.

### **ARTH 6112 - Egypt Art-Old Kingdom**

**Credit Hours:** (3) **Description** Art, architecture, and archaeology, 3000-1500 BC.

### **ARTH 6113 - Egypt Art-New Kingdom**

**Credit Hours:** (3) **Description** Art, architecture, and archaeology, 1500 BC. to 642 AD.

### **ARTH 6119 - Late Antique/Islamic Art/Egypt**

**Credit Hours:** (3) **Description** Pharaonic and Hellenistic roots of Coptic Art, its 3rd and 4th century AD flourishing, place within the larger milieu of the Byzantine Empire's culture and artistic expression, interaction with the Late Antique arts of the Eastern Mediterranean, and influence on the Islamic Art of Egypt.

### **ARTH 6121 - Ancient Art Near East**

**Credit Hours:** (3) **Description** Architecture, sculpture, painting, and the minor arts in Mesopotamia, Anatolia, and Syria-Palestine.

### **ARTH 6123 - Greek Art**

**Credit Hours:** (3) **Description** Architecture, sculpture, and painting from the Bronze Age to the end of the Hellenistic period.

### **ARTH 6124 - Roman Art**

**Credit Hours:** (3) **Description** Architecture, sculpture, and painting from Etruscan Rome to the fall of the Empire.

### **ARTH 6125 - Art/Archaeology Pompeii**

**Credit Hours:** (3) **Description** Pompeii's excavations, art, artifacts, and architecture in reconstructing ancient Roman daily life.

### **ARTH 6129 - Ancient/Medieval Arch**

**Credit Hours:** (3) **Description** Selected topics comparing the architecture of ancient Egypt, the Classical world, and Medieval Europe.

### **ARTH 6130 - Art/Medieval World**

**Credit Hours:** (3) **Description** Architecture, sculpture, and painting, including manuscript illumination, of the Middle Ages; includes Western European and Byzantine traditions.

### **ARTH 6131 - Art/Early Middle Ages**

**Credit Hours:** (3) **Description** Advanced study of the architecture, sculpture, and painting of early medieval period.

### **ARTH 6134 - Art/High Middle Ages**

**Credit Hours:** (3) **Description** Advanced study of the architecture, sculpture, and painting, including manuscript illumination, stained glass, and ivories, of Romanesque and Gothic periods.

### **ARTH 6141 - Art of Italy, 1250-1450**

**Credit Hours:** (3) **Description** This course examines painting, sculpture, and architecture in Italy during the major transitional period of about 1250 to 1450, immediately preceding that which is traditionally referred to as the Italian Renaissance. We will explore the historical, theological, and social roots of the artistic transformations that took place, laying the foundations for what was to come. Lectures and discussions will consider topics such as painting and devotion, image theory, art and urbanism, science and

psychology, politics and power, and pictorial space and structure.

### **ARTH 6142 - Art of Northern Europe, 1350-1600**

**Credit Hours:** (3) **Description** Traditionally referred to as the Northern Renaissance, this course explores painting, sculpture, and the graphic arts of Northern Europe from about 1350 to 1600, specifically Flanders, the Netherlands, and Germany. Examining key works from the period, students evaluate the influence of political and religious institutions, expansions in international trade, and the rise of humanism.

### **ARTH 6143 - Art of Italy, 1450-1600**

**Credit Hours:** (3) **Description** This course examines painting, sculpture, and architecture in Italy from about 1450 to 1600, during the height of the period traditionally referred to as the Italian Renaissance. As a period known for its increased naturalism in art and its advances in a variety of fields including science, philosophy, and technology, the course addresses how works of art were shaped by cultural, political, social, and global movements of the period. Throughout the term, students will explore the special characteristics of art from this period that continue to have an impact on the art world today.

### **ARTH 6146 - European Art, 1600-1750**

**Credit Hours:** (3) **Description** Traditionally known as the Baroque and early Rococo periods, this course examines the painting, printmaking, sculpture, and architecture of Western Europe from about 1600 to 1750, one of the most expressive and volatile periods in the early modern Western world. The course largely considers how the Protestant Reformation and the Counter Reformation transformed the art world, and focuses on ways that art was used as a means of persuasion by political and religious institutions.

### **ARTH 6148 - Neo-Class/Romanticism**

**Credit Hours:** (3) **Description** Western European art, ca. 1760-1850, emphasizing painting, sculpture, and art theory.  
**PREREQUISITE(S):** ARTH 2102 or permission of instructor.

### **ARTH 6149 - Realism & Impressionism**

**Credit Hours:** (3) **Description** Western European art, ca. 1850-1880, emphasizing painting, sculpture, and art theory.

**PREREQUISITE(S):** ARTH 2102 or permission of instructor.

### **ARTH 6152 - Post-Impressionism and Symbolism**

**Credit Hours:** (3) **Description** Movements in Western European art and art theory, 1880-1905, that are the foundation of 20th century modernism. **PREREQUISITE(S):** ARTH 2020 or permission of instructor.

### **ARTH 6153 - Cubism Thru Surrealism**

**Credit Hours:** (3) **Description** Modern European art movements from ca. 1905 to World War II; covers Cubism, Expressionism, Surrealism. **PREREQUISITE(S):** ARTH 2102 or permission of instructor.

### **ARTH 6155 - Art Since 1945**

**Credit Hours:** (3) **Description** This course explores cutting-edge visual art practices and theories during the second half of the twentieth century with a focus on Western culture. Discussion moves chronologically and thematically through various innovative movements and trends, exploring internationally shared artistic techniques and goals. Students will learn about avant-garde artistic practices that have shaped and continue to shape our global culture. Students will gain familiarity with artistic movements and individual artists as well as develop the ability to analyze the content and contexts of works of art. Topics include Abstract Expressionism, Pop Art, Minimalism, Process Art, Land Art, Conceptual Art, Body and Performance Art, Installation Art, the Black Arts Movement, Feminist Art, and Queer Art. **PREREQUISITE(S):** ARTH 2020 or permission of instructor. Standard Letter

### **ARTH 6157 - Themes in Contemporary Art**

**Credit Hours:** (3) **Description** This course investigates the diversity of global visual art practices through thematic topics such as activism, nature, identity, the body, memory, spirituality, language, and science. Emphasis is placed on contemporary art practices, but students are encouraged to consider artwork within larger historical and cultural contexts. **PREREQUISITE(S):** ARTH 2020 or permission of instructor. Standard Letter

### **ARTH 6158 - Modern Architecture**

**Credit Hours:** (3) **Description** 19th century styles, 20th century masters, contemporary developments in architecture, including historic preservation.

### **ARTH 6160 - Architecture & Nature**

**Credit Hours:** (3) **Description** Survey and analysis of spaces in variety of cultures from world history where relationship between the natural and the built environment is healthy.

### **ARTH 6162 - Latin American Art**

**Credit Hours:** (3) **Description** Hispanic arts of the Americas from 1500 to the present, considered in relation to Iberian and Indian traditions.

### **ARTH 6163 - Pre-Columbian Art**

**Credit Hours:** (3) **Description** A survey of the ancient arts of Mexico, Central America, and South America from c. 1000 BC. to European contact.

### **ARTH 6166 - American Art: 1500s-1940s**

**Credit Hours:** (3) Former: (6167, 6168) **Description** (6167, 6168). American art examined in social, cultural, and historical contexts; presents broad range of creative expression, including fine and applied arts and popular culture, from conquest period to modern developments in American visual studies.

### **ARTH 6168 - Art and Social Conflict 1920-P**

**Credit Hours:** (3) **Description** This course will consider instances of visual culture, including fine art but also film, magazines, etc. that contribute to American identity. We will consider visual practices that reflect and reinforce dominant ideas of American identity, but also will discuss strategies that contest American identity and try to imagine more inclusive alternatives.

### **ARTH 6181 - Africa-Native-America-Oceania**

**Credit Hours:** (3) **Description** The course examines the arts-visual cultures of Africa, Native North America, and Oceania (Pacific Islands). It investigates from a global perspective the impact of historic encounters between the western world and non-European cultures. This interdisciplinary course engages

lecture, assigned readings, cinema, literary traditions, and field trips to view exhibits.

### **ARTH 6183 - Visual Arts Of Africa**

**Credit Hours:** (3) **Description** Survey of arts of African continent from pre-historic to modern eras; African aesthetic traditions examined in relation to social and cultural contexts.

### **ARTH 6185 - African American Art**

**Credit Hours:** (3) **Description** Introduction to African American visual expression and culture from Colonial to modern eras, covering fine arts, photography, film, and popular culture.

### **ARTH 6381 - Art Curatorial Tech**

**Credit Hours:** (3) **Description** Concentrates on curatorial responsibilities and functions, receiving and shipping methods, registration, physical and environmental security, research, conservation, and a study of the art market and publications.

### **ARTH 6660 - Museum Collections \*\***

**Credit Hours:** (3) *Cross listing* (Same as ANTH 6660)  
**Description** Museum collection theory and methods, including collection policy, development, preservation, documentation, and interpretation. **PREREQUISITE(S):** Permission of instructor.

### **ARTH 6661 - Collections Research**

**Credit Hours:** (3) *Cross listing* (Same as ANTH 6661)  
**Description** Introduces students in object-based disciplines to museum collections research methods and their applications to exhibitions, catalogs, and scholarly publications.  
**PREREQUISITE(S):** Permission of instructor.

### **ARTH 6662 - Museum Exhibitions \*\***

**Credit Hours:** (3) *Cross listing* (Same as ANTH 6662)  
**Description** Museum exhibition methods and theory, including research, design, layout, object selection and handling, installation, public programming, and evaluation.  
**PREREQUISITE(S):** Permission of instructor.

### **ARTH 6721 - History Photography I**

**Credit Hours:** (3) **Description** Survey of the history and theory of photography since its invention in the 19th century.

### **ARTH 6722 - History Photography II**

**Credit Hours:** (3) **Description** Historical and critical issues in photography from World War I to present.

### **ARTH 7000 - Semn Art/Vis Cult Afr/Afr Dias**

**Credit Hours:** (3) **Description** Interdisciplinary seminar exploring art and visual culture in a diversity of geographical contexts and historical periods. Topics will vary and may include: the arts of post-colonial Africa, contemporary African American art, the festival arts of the Caribbean, or imaging race in nineteenth century European art and visual culture.

### **ARTH 7010 - Arts of Colonialism/Empire**

**Credit Hours:** 3 **Description** Major themes in the study of African Diaspora art, artists, and visual culture, specifically the histories of migration, dispersal, and mobility of peoples of African descent both within and outside the continent; aesthetics, race and representation, politics, gender, class differences, sexuality, strategies of resistance, cross-cultural influences, issues of patronage, and cultural identity formation.

### **ARTH 7011 - African American-Diaspora Cinema**

**Credit Hours:** 3 **Description** Visual culture that examines significant themes in US film history focusing on the development of African American cinema, and filmed representations of the African American experience. The history of African American film production is considered within historical, cultural, social, and political contexts. Readings in film criticism and theory examine the development of African American cinema as a particular genre of film and aesthetic expression. Diversity and difference are critical themes in the representation of race, ethnicity, gender, sexuality, and class in cinema, a quintessentially American art form. From an interdisciplinary and comparative perspective, film representative of the broader African Diaspora will also be examined.

### **ARTH 7012 - African American-Diaspora Photographic Culture**

**Credit Hours:** 3 **Description** This is a visual culture studies course designed to investigate the African American

photographic experience from the nineteenth century to the contemporary. It explores the relationship between African Americans and the African diaspora and photography by examining blacks as subjects, creators, and theorists of a diverse range of photographic representation. The course incorporates analysis of daguerreotypes, installation, image-text collaborations, as well as traditions of portraiture, colonialist photography, street photography, social documentary, civil rights photography, photo-journalism and photographic imagery in popular cultures.

### **ARTH 7030-7039 - Special Topics in Art History**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in online class listings. May be repeated to maximum of 9 hours when topic varies.

### **ARTH 7110 - Adv Indv Stdy Art Hist**

**Credit Hours:** (3) **Description** Historical periods of art history with emphasis on individual research. May be repeated for credit when topic varies. May be repeated for credit when topic varies **PREREQUISITE(S):** permission of instructor Grades of A-F, or IP will be given.

### **ARTH 7114 - Intro Coptic Language/Culture**

**Credit Hours:** (3) **Description** Introduction to Coptic, with emphasis on the Sahidic dialect, combined with select readings from authentic texts and a discussion of the use of texts in Coptic iconography.

### **ARTH 7115 - Middle Egyptian I**

**Credit Hours:** (3) **Description** Grammar and translation of hieroglyphs.

### **ARTH 7116 - Middle Egyptian II**

**Credit Hours:** (3) **Description** Readings in hieroglyphs **PREREQUISITE(S):** ARTH 7115 or equivalent.

### **ARTH 7117 - Middle Egyptian Lit**

**Credit Hours:** (3) **Description** Readings and translations of major literature of Ancient Egypt. **PREREQUISITE(S):** ARTH 7116 or equivalent.

### **ARTH 7118 - Egyptian Texts**

**Credit Hours:** (3) **Description** Advanced readings and translations of ancient Egyptian texts. **PREREQUISITE(S):** ARTH 7116 OR equivalent.

### **ARTH 7119 - Late Egyptian**

**Credit Hours:** (3) **Description** Readings in literature and other texts. **PREREQUISITE(S):** ARTH 7116 or equivalent.

### **ARTH 7120 - Grad Prob Medieval Art**

**Credit Hours:** (3) **Description** Selected areas or specific problems in Early Medieval, Romanesque, or Gothic Art. May be repeated for a maximum of 12 hours when topic varies. Grades of A-F, or IP will be given. May be repeated for a maximum of 12 hours when topic varies Grades of A-F, or IP will be given.

### **ARTH 7121 - Grad Prob Ancient Art**

**Credit Hours:** (3) **Description** Selected areas or specific problems in Egyptian, Near Eastern, Greek, or Roman Art. May be repeated for a maximum of 12 hours when topic varies. Grades of A-F, or IP will be given. May be repeated for a maximum of 12 hours when topic varies Grades of A-F, or IP will be given.

### **ARTH 7122 - Ancient Egyptian Cursive Scrip**

**Credit Hours:** (3) **Description** Reading of select Egyptian texts written in hieratic. **PREREQUISITE(S):** ARTH 7119 or equivalent.

### **ARTH 7125 - Egyptian Art & Arch**

**Credit Hours:** (3) **Description** Topics and problems in Egyptian art and archaeology. May be repeated for a maximum of 12 hours when topic varies. May be repeated for a maximum of 12 hours when topic varies.

### **ARTH 7130 - Art Hist Methods & Prac**

**Credit Hours:** (3) **Description** History of the discipline along with current research methods. Students develop research presentations in oral and written formats.

### **ARTH 7140 - Grad Prob Renaissance**

**Credit Hours:** (3) **Description** Selected areas or specific problems of Renaissance Art. May be repeated for a maximum of 12 hours when topic varies. Grades of A-F, or IP will be given. May be repeated for a maximum of 12 hours when topic varies Grades of A-F, or IP will be given.

### ARTH 7150 - Grad Prob 19th Century

**Credit Hours:** (3) **Description** Selected areas or specific problems in Nineteenth Century Art. May be repeated for a maximum of 12 hours when topic varies. Grades of A-F, or IP will be given. May be repeated for a maximum of 12 hours when topic varies Grades of A-F, or IP will be given.

### ARTH 7152 - Grad Prob 20th Century

**Credit Hours:** (3) **Description** Selected areas or specific problems in Twentieth Century Art. May be repeated for a maximum of 12 hours when topic varies. Grades of A-F, or IP will be given. May be repeated for a maximum of 12 hours when topic varies Grades of A-F, or IP will be given.

### ARTH 7165 - Gr Prob Am Art Anc/Mod

**Credit Hours:** (3) **Description** Selected areas or specific problems in Pre-Columbian, North American Indian, Spanish Colonial, or American Art. May be repeated for a maximum of 12 hours when topic varies. Grades of A-F, or IP will be given. May be repeated for a maximum of 12 hours when topic varies. Grades of A-F, or IP will be given.

### ARTH 7660 - Dir Indiv Study

**Credit Hours:** (3-9) **Description** Individual investigation of special research problems or projects. May be repeated upon recommendation of advisor. Grades of A-F, or IP will be given. May be repeated upon recommendation of advisor. Grades of A-F, or IP will be given.

### ARTH 7661 - Museum Practices \*\*

**Credit Hours:** (3) *Cross listing* (Same as ANTH 7661)  
**Description** Museum administration, finance, collection management, conservation, education, exhibition design, marketing, and visitor services. **PREREQUISITE(S):** Permission of instructor.

### ARTH 7662 - Museums & Communities \*\*

**Credit Hours:** (3) *Cross listing* (Same as ANTH 7662)  
**Description** History and theory of museums, governance,

audiences, and current topics in the profession.  
**PREREQUISITE(S):** Permission of instructor.

### ARTH 7669 - Museum Internship \*\*

**Credit Hours:** (3-6) *Cross listing* (Same as ANTH 7669)  
**Description** Structured experience in selected aspects of museum practice. Includes 150 contract hours in museum and colloquium. May be repeated for a maximum of 6 credit hours. May be repeated for a maximum of 6 credit hours  
**PREREQUISITE(S):** ANTH 7661, ANTH 7662 and/or permission of instructor Grades of A-F, or IP will be given.

### ARTH 7900 - Art Historical Fieldwork

**Credit Hours:** (3-6) **Description** Structured experience in select aspects of fieldwork, including studying objects in museum collections, working with archival material, conducting interviews with artists, or participating in epigraphic or archaeological fieldwork. A minimum of 150 hours (or equivalent) required. **PREREQUISITE(S):** Completion of 18 graduate credit hours at The University of Memphis or permission of academic advisor or instructor.

### ARTH 7996 - Thesis

**Credit Hours:** (1-6) **Description** Preparation and defense of a thesis prepared under direction of major professor. Studio Art thesis requires an exhibition. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

### ARTH 8000 - Semn Art/Vis Cult Afr/Afr Dias

**Credit Hours:** (3) **Description** Interdisciplinary seminar exploring art and visual culture in a diversity of geographical contexts and historical periods. Topics will vary and may include: the arts of post-colonial Africa, contemporary African American art, the festival arts of the Caribbean, or imaging race in nineteenth century European art and visual culture.

### ARTH 8010 - Arts of Colonialism and Empire

**Credit Hours:** (3) **Description** The Arts of Colonialism and Empire is a 7000-8000 level seminar course that examines the historical relationship between the dispersal of the African Diaspora and the development of New World arts and visual cultures that have influenced the western world. It focuses on how modernity and visuality were shaped by the forced migration, dispersal, and the continuing mobility of peoples of African descent, both within and outside the continent.

Themes of discussion will include aesthetics, race and representation, gender, politics and strategies of resistance, cross-cultural influences, class, and cultural identity formation. (offered in even years). Cannot be repeated. Cannot be repeated. (offered in even years)

### **ARTH 8011 - AfricanAmericanCinema: Theory**

**Credit Hours:** (3) **Description** Image, Theory, Criticism is a 7000-8000 level seminar that examines African American film production within historical, cultural, social, and political contexts. Readings in criticism and theory focus on African American cinema as a particular genre of film and aesthetic expression. From a global perspective the course also examines film and filmmakers representative of the broader African Diaspora. (offered odd years). Course is not repeatable. Course is not repeatable. (offered odd years)

### **ARTH 8012 - AfricanAmerican Photog.Culture**

**Credit Hours:** (3) **Description** African American Photographic Culture is a 7000-8000 level seminar course that examines the historical relationship between photography and the African American experience. It is an interdisciplinary course useful to a broad range of students interested in the black image and photographs as art, history, and material culture. The course focuses on African Americans as creators and theorists of photographic imagery. The course will also examine the broader picture of photographic traditions in Africa and the African Diaspora. Research projects will include investigation of significant photograph collections in local archives. (offered in odd years). The course is not repeatable. The course is not repeatable. (offered in odd years)

### **ARTH 8030-8039 - Special Topics in Art History**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in online class listings. May be repeated to maximum of 9 hours when topic varies.

### **ARTH 8120 - Grad Prob Medieval Art**

**Credit Hours:** (3) **Description** Selected areas or specific problems in Early Medieval, Romanesque, or Gothic Art. May be repeated for a maximum of 12 hours when topic varies. Grades of A-F, or IP will be given. May be repeated for a maximum of 12 hours when topic varies Grades of A-F, or IP will be given.

### **ARTH 8121 - Grad Prob Ancient Art**

**Credit Hours:** (3) **Description** Selected areas or specific problems in Egyptian, Near Eastern, Greek, or Roman Art. May be repeated for a maximum of 12 hours when topic varies. Grades of A-F, or IP will be given. May be repeated for a maximum of 12 hours when topic varies Grades of A-F, or IP will be given.

### **ARTH 8125 - Egyptian Art & Arch**

**Credit Hours:** (3) **Description** Topics and problems in Egyptian art and archaeology. May be repeated for a maximum of 12 hours when topic varies. May be repeated for a maximum of 12 hours when topic varies.

### **ARTH 8130 - Art Hist Methods & Prac**

**Credit Hours:** (3) **Description** History of the discipline along with current research methods. Students develop research presentations in oral and written formats.

### **ARTH 8140 - Grad Prob Renaissance**

**Credit Hours:** (3) **Description** Selected areas or specific problems of Renaissance Art. May be repeated for a maximum of 12 hours when topic varies. Grades of A-F, or IP will be given. May be repeated for a maximum of 12 hours when topic varies Grades of A-F, or IP will be given.

### **ARTH 8150 - Grad Prob 19th Century**

**Credit Hours:** (3) **Description** Selected areas or specific problems in Nineteenth Century Art. May be repeated for a maximum of 12 hours when topic varies. Grades of A-F, or IP will be given. May be repeated for a maximum of 12 hours when topic varies Grades of A-F, or IP will be given.

### **ARTH 8152 - Grad Prob 20th Century**

**Credit Hours:** (3) **Description** Selected areas or specific problems in Twentieth Century Art. May be repeated for a maximum of 12 hours when topic varies. Grades of A-F, or IP will be given. May be repeated for a maximum of 12 hours when topic varies Grades of A-F, or IP will be given.

### **ARTH 8165 - Gr Prob Am Art Anc/Mod**

**Credit Hours:** (3) **Description** Selected areas or specific problems in Pre-Columbian, North American Indian, Spanish



Colonial, or American Art. May be repeated for a maximum of 12 hours when topic varies. Grades of A-F, or IP will be given. May be repeated for a maximum of 12 hours when topic varies. Grades of A-F, or IP will be given.

### **ARTH 8660 - Dir Indiv Study**

**Credit Hours:** (3-9) **Description** Individual investigation of special research problems or projects. May be repeated upon recommendation of advisor. Grades of A-F, or IP will be given.

## **Bioinformatics**

### **BINF 7092 - Research**

**Credit Hours:** (1-3) **Description** Non-traditional setting in which master's students develop research in consultation with the instructor and the program director that will lead to development of Master's Thesis or Project. Two written reports are required per semester. May be repeated for a total of 12 semester hours. Up to four credit hours may be applied toward the degree requirement. Grades of S/U, or IP will be given. May be repeated for a total of 12 semester hours. Up to four credit hours may be applied toward the degree requirement

### **BINF 7201-7210 - Special Topics in Bioinformatics**

**Credit Hours:** (3) **PREREQUISITE(S):** permission of instructor.

### **BINF 7701 - Adv. Genomics & Bioinformatics**

**Credit Hours:** (3) **Description** Accelerated introduction to molecular and genomic sciences, covering basic concepts of gene and protein structure/ function, genome sequencing and annotation, single nucleotide polymorphism, genetic variation, gene expression, and functional genomics and systems biology. **PREREQUISITE(S):** Permission of Instructor.

### **BINF 7970 - Curr Lit Bioinformatics**

**Credit Hours:** (1) **Description** Lectures, readings, discussions, and oral presentation from current bioinformatics research articles. One class is required to meet degree requirements. **PREREQUISITE(S):** permission of instructor.

### **BINF 7980 - Rsch Sem/Bioinformatics**

**Credit Hours:** (1) **Description** Current research topics in Bioinformatics. One class is required to meet degree requirements. **PREREQUISITE(S):** Permission of Instructor.

### **BINF 7991 - Bioinformatics Internship**

**Credit Hours:** (1-3) **Description** Supervised practical experience conducted in industrial, academic research or clinical research organizations. The project must be approved by the program director and may be supervised by any faculty in the program. A written report is required. Up to three credit hours may be applied toward the degree requirement. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

### **BINF 7992 - Bioinformatics Project**

**Credit Hours:** (3) **Description** Research project conducted in lieu of a Master's thesis under the supervision of a faculty advisor. The project must be approved by the program director and may be supervised by any faculty in the program. A written report and an oral presentation are required for satisfactory completion of the course. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

### **BINF 7996 - Bioinformatics Thesis**

**Credit Hours:** (1-6) **Description** Supervised research in preparation for advanced degree thesis. May be repeated for up to 6 hours. Grades of S, U, or IP will be given. May be repeated for up to 6 hours **PREREQUISITE(S):** BIOL 1120 and 1121. Grades of S, U, or IP will be given.

## **Biology**

### **BIOL 6049 - Marine Ecology Lab**

**Credit Hours:** (2) **Description** This course taught only at the Gulf Coast Research Laboratory, Ocean Spring, Mississippi. University of Memphis residence credit is given through affiliation with the Laboratory. Laboratory for BIOL 4051- BIOL 6051. **PREREQUISITE(S):** Four semesters of science or permission of instructor. **COREQUISITE(S):** BIOL 6051

### **BIOL 6051 - Marine Ecology**

**Credit Hours:** (3) **Description** This course taught only at the Gulf Coast Research Laboratory, Ocean Spring,

Mississippi. University of Memphis residence credit is given through affiliation with the Laboratory. Relationship of marine organisms to their environment. **PREREQUISITE(S):** Four semesters of science or permission of instructor  
**COREQUISITE(S):** BIOL 6049

### BIOL 6053 - Plant Ecology

**Credit Hours:** (4) **Description** Relationships of plants and environmental factors at physiological, population, and community scales; ecosystem dynamics at local and landscape scales; emphasis on field techniques. Two lecture, four laboratory hours per week. Two lecture, four laboratory hours per week. **PREREQUISITE(S):** BIOL 1120 and 1121.

### BIOL 6054 - Wetland Ecology

**Credit Hours:** (4) **Description** Wetlands and wetland resources; attributes of hydrology, biogeochemistry, and wetland plants with emphasis on bottomland hardwood forests. Two lecture, four laboratory hours per week. Two lecture, four laboratory hours per week.  
**PREREQUISITE(S):** BIOL 3050 and consent of instructor.

### BIOL 6055 - Ecological/Environ Issues

**Credit Hours:** (3) **Description** Ecological perspective on current environmental issues such as conservation and biodiversity, global climatic change, and regulation of chemicals in the environment. Three lecture hours per week. Three lecture hours per week. **PREREQUISITE(S):** BIOL 1120 and 1121.

### BIOL 6056 - Tropical Ecology

**Credit Hours:** (4) **Description** Lecture and field intensive course in ecology of the tropics. International travel required for laboratory portion of course. Two lecture hours, four laboratory hours per week. Two lecture hours, four laboratory hours per week **PREREQUISITE(S):** BIOL 1120 and 1121.

### BIOL 6065 - Biodiversity

**Credit Hours:** 3 **Description** Survey of Earth's biodiversity – the variety of life on Earth – on ecological and evolutionary timescales, focused on primary scientific literature; numbers and kinds of organisms; processes that create and maintain biodiversity; distribution of biodiversity on Earth; extinction; how/where biodiversity is threatened; importance of biodiversity to humans; wilderness, conservation and future of biodiversity. Three lecture hours per week. 0 na

**PREREQUISITE(S):** PREREQUISITE: BIOL 3130 or BIOL 3500, or permission of instructor. **COREQUISITE(S):** na  
**PREREQUISITE(S)** or **COREQUISITE(S):** na

### BIOL 6071 - Human Genetics

**Credit Hours:** (3) **Description** Genetic principles as they apply to humans, including pedigree analysis, genetic counseling, cancer, and genomics. Three lecture hours per week. Three lecture hours per week. **PREREQUISITE(S):** BIOL 3072.

### BIOL 6090-6099 - Special Topics in Biology

**Credit Hours:** (1-3) **Description** Topics are varied and announced in Online course listings; may be repeated with different topics for a maximum of 4 hours

### BIOL 6100 - Evolution

**Credit Hours:** (3) **Description** Synthesis of principles and concepts of modern evolutionary theory; geological evolution, biological evolution, and evolution of societies; emphasis on recent developments and current controversies. Three lecture hours per week. **PREREQUISITE(S):** BIOL 3072.

### BIOL 6150 - Developmental Biology

**Credit Hours:** (3) Former: (MMCS 6150) **Description** (MMCS 6150). Introduction to study of developing biological systems at cellular and molecular level. Three lecture hours per week. **PREREQUISITE(S):** BIOL 3072 and CHEM 3511.

### BIOL 6204 - Environmental Science

**Credit Hours:** 3 *Cross listing* ESCI 6204 **Description** This course is designed to bring the student to an applied and informed awareness of responsible behavior toward our environment and the role of the human race therein. The content will include a study of the philosophical and scientific basis for the study of ecosystems and the environment, the nature of ecosystems, the techniques used to study the environment, the origin and development of current environmental problems, the interdisciplinary nature of environmental studies, the process of critical thinking and problem solving, and the moral and ethical implications of environmentally-mandated decisions.

### BIOL 6230 - Plant Physiology

**Credit Hours:** (3) **Description** Whole plant functioning and plant responses to environmental stresses and pollution. Three lecture hours per week. **PREREQUISITE(S):** BIOL 1120 and 1121, or permission of instructor.

### **BIOL 6241 - Biogeog/GIS Analyses/Ecology**

**Credit Hours:** (3) *Cross listing* (Same as ESCI 6241) **Description** (Same as ESCI 6241). Basic principles of interaction between geography, organism diversity and evolution; physical factors limiting species distribution, theories of island biogeography, geographical modes of speciation. Laboratories introduce principles of GIS, basic functions of ArcGIS, and other programs relevant to ecological studies. Two lecture hours, two laboratory hours per week. **PREREQUISITE(S):** BIOL 1120 and 1121, or permission of instructor.

### **BIOL 6245 - Plant Systematics/Evolution**

**Credit Hours:** (4) **Description** Evolution and classification of flowering plants, Angiosperms; diversity of flowering plants on worldwide basis; relationship of major flowering plant families; systems of classification, nomenclature, field collecting techniques, preparation of specimens, family characteristics. Laboratories include practical aspects of flowering plant classification and identification. Three lecture hours and three laboratory hours per week. **PREREQUISITE(S):** BIOL 1120 and 1121, or BIOL 3200, or permission of instructor.

### **BIOL 6375 - Molec Biol/Parasites**

**Credit Hours:** (4) Former: (MMCS 4375) **Description** (MMCS 4375). Parasites with emphasis on molecular and immunological aspects of their biology; parasites of humans emphasized with some examples of parasites of companion animals and livestock; biology, treatment and prevention of parasitic diseases. Three lecture hours, two laboratory hours per week. **PREREQUISITE(S):** BIOL 3130 or 3550.

### **BIOL 6380 - Vertebrate Histology**

**Credit Hours:** 3 Former: (MMCS 6380) **Description** (MMCS 6380) Vertebrate (human emphasis) tissues and organs; cellular and extracellular microscopic composition in relation to physiology and disease. Three lecture hours per week. Three lecture hours per week. 0 **PREREQUISITE(S):** BIOL 3130

### **BIOL 6401 - Plant Cell Molec Biol**

**Credit Hours:** (3) Former: (MMCS 6400) **Description** (MMCS 6400). The cellular and molecular basis of plant development, including plant hormones, signal transduction, regulation by light, plant-microbe interactions, and plant transformation. Three lecture hours per week. **PREREQUISITE(S):** BIOL 3130 and BIOL 3072.

### **BIOL 6440 - Pathogenic Bacteriology**

**Credit Hours:** (3) Former: (MMCS 4440) **Description** (MMCS 4440). Unifying concepts in bacterial pathogenesis, with emphasis on molecular aspects of pathogenesis and modern approaches to pathogenesis research; introduction to immunology; human microbiota and opportunistic pathogens; pathogen evolution; virulence factor regulation, delivery, and mechanism; antibiotics and antibiotic resistance; vaccination. Three lecture hours per week. **PREREQUISITE(S):** BIOL 3550 and CHEM 3511.

### **BIOL 6445 - Immunology**

**Credit Hours:** (3) Former: (MMCS 6445) **Description** (MMCS 6445). Antigens, immunoglobulin classes, cells and cytokines of immune response, complement system, hypersensitivities, blood groups, vaccines and immunity. Three lecture hours per week. **PREREQUISITE(S):** BIOL 3130 or 3500 and CHEM 3511.

### **BIOL 6450 - Microbial Ecology**

**Credit Hours:** (3) Former: (MMCS 6450) **Description** (MMCS 6450). Roles of microorganisms in the environment; microbial processes, interactions with the environment and biota, population ecology, community ecology, and biodegradation. Three lecture hours per week. **PREREQUISITE(S):** Consent of instructor.

### **BIOL 6465 - Adv Medical Microbiol Lab**

**Credit Hours:** (2) Former: (MMCS 6465) **Description** (MMCS 6465). Application of modern laboratory techniques and instrumentation to experiments in pathogenic bacteriology, immunology, virology, and parasitology. Four laboratory hours per week. **PREREQUISITE(S):** BIOL 3500 and 3505.

### **BIOL 6470 - Molecular Biology of the Gene**

**Credit Hours:** (3) Former: (MMCS 6470) **Description** (MMCS 6470). Theoretical and application based approaches to molecular biology and regulation of gene expression.

Course surveys modern methods in research and medicine. Stem cells and cancer cells used as model systems to understand changes in gene regulation at the level of genome, transcriptome, and proteome. Three lecture hours per week. **PREREQUISITE(S):** BIOL 3072 or permission of instructor.

### BIOL 6480 - Cellular/Molec Pharmacol

**Credit Hours:** (3) **Description** Provides basic understanding of mechanisms by which therapeutic agents regulate physiological function of cells comprising organ systems such as the heart and central nervous system; drug action (pharmacodynamics) addressed at the molecular, cellular, and organ level, as well as common diseases affecting a system. Three lecture hours per week. **PREREQUISITE(S):** CHEM 1120 and BIOL 3130.

### BIOL 6490 - Intro Genomics/Bioinformatics

**Credit Hours:** (3) **Description** Survey of modern genomics and bioinformatics approaches used to gain a deeper understanding of biological systems; brief review of basic chemistry, molecular and evolutionary biology; experimental and bioinformatics methods for predicting RNA folding, generating and analyzing genome-scale DNA sequence data, and performing functional genomics analyses of gene expression, DNA methylation, and chromatin immunoprecipitation data; real-world applications of genomics and bioinformatics in medicine and agriculture. Three lecture hours per week. **PREREQUISITE(S):** BIOL 3130 and BIOL 3072, or permission of instructor.

### BIOL 6501 - Virology

**Credit Hours:** (3) Former: (MMCS 6501) **Description** (MMCS 6501). Introductory study of viruses of human and veterinary significance, and methods of cultivation, isolation, and characterization; study of pathogenic mechanisms. Three lecture hours per week. **PREREQUISITE(S):** BIOL 3130, 3500 or 3550.

### BIOL 6503 - Lab Tech In Biochem

**Credit Hours:** (2) Former: (MMCS 6503) *Cross listing* (Same as CHEM 6501) **Description** (MMCS 6503). (Same as CHEM 6501). Biochemical techniques, analysis and design strategies; properties of protein/enzymes, including binding, catalysis, kinetics, electron and proton transport processes of intermediate metabolism; purification, characterization and assay of enzymes using chromatography, spectroscopy and electrophoresis. Six laboratory hours per week. **PREREQUISITE(S):** CHEM 3501

### BIOL 6504 - Lab Tech Molecular Biol

**Credit Hours:** (2) Former: (MMCS 6504) **Description** (MMCS 6504). Biochemical and molecular biology laboratory techniques; emphasis on nucleic acids and recombinant DNA; vector design and practical incorporation into host systems; product expression, isolation and identification; bioinformatics in research design strategies. Six laboratory hours per week; **PREREQUISITE** or **COREQUISITE:** BIOL 6512 or CHEM 6512 or permission of instructor. **PREREQUISITE(S)** or **COREQUISITE(S):** BIOL 6512 or CHEM 6512 or permission of instructor.

### BIOL 6511 - Biochemistry I

**Credit Hours:** (3) Former: (MMCS 4511) *Cross listing* (Same as CHEM 4511) **Description** Chemistry of amino acids and proteins related to their properties in biochemical systems; protein conformation studies; enzymology, coenzymes and their functions; importance of pH and bioenergetics in catalysis; protein and carbohydrate metabolism. Three lecture hours per week. **PREREQUISITE(S):** BIOL 1120 and CHEM 3511 with at least a C-.

### BIOL 6512 - Biochemistry II

**Credit Hours:** (3) Former: (MMCS 6512) *Cross listing* (Same as CHEM 6512) **Description** (MMCS 6512). (Same as CHEM 6512). Continuation of BIOL 6511; chemistry of lipids; metabolism, membrane formation and function in cell signaling mechanisms and sensory transduction; chemistry of nucleotides, DNA and RNA; mechanisms of information storage and transmission; advanced treatment of enzyme kinetics. Three lecture hours per week. **PREREQUISITE(S):** BIOL 6511 or CHEM 6511 with at least C-.

### BIOL 6604 - Animal Behavior

**Credit Hours:** (4) **Description** Animal behavior, primarily from ecological, physiological, developmental, and evolutionary perspective. Three lecture, two laboratory hours per week. **PREREQUISITE(S):** BIOL 1120 and 1121.

### BIOL 6605 - Biology of Cancer

**Credit Hours:** 3 **Description** The class will introduce students to the biology of cancer including etiology, progression, and treatment of this disease. The course will include both historical and current aspects of cancer research, aiming to provide the students with a firm understanding of the causes and progression of this disease. By focusing on a

disease that affects most of our lives, this class will integrate knowledge of specific disciplines and help the student to see the interconnectedness of biological studies in all forms.

**PREREQUISITE(S):** Completion of BIOL 3130 and BIOL 3072 or permission of the instructor

### **BIOL 6630 - Gen Endocrinology**

**Credit Hours:** (3) **Description** Anatomy and physiology of the organs of internal secretion; role of hormones in metabolism and development. Three lecture-demonstration hours per week. **PREREQUISITE(S):** BIOL 3030 or 3730, or permission of instructor.

### **BIOL 6635 - Neurobiology**

**Credit Hours:** (3) **Description** Basic structure and function of nervous system and its development; resting membrane potential, structure/function of ion channels; mechanisms of action potential conduction, presynaptic neurotransmitter vesicle exocytosis, postsynaptic receptors and signal transduction pathways, synaptic structure and development. Three lecture hours per week. **PREREQUISITE(S):** BIOL 3130 or permission of instructor.

### **BIOL 6640 - Ornithology**

**Credit Hours:** (4) **Description** Biology of birds, with emphasis on avian anatomy, physiology, behavior, and reproductive biology. Field trips emphasize identification of local species and techniques of field study. Two lecture, four field/laboratory hours per week. **PREREQUISITE(S):** BIOL 1120 and 1121.

### **BIOL 6651 - Field Tech/Vertebrate Zoology**

**Credit Hours:** (4-6) **Description** Techniques in extended field study of vertebrates outside the local area. Credit hours to be determined in consultation with instructor. **PREREQUISITE(S):** BIOL 1120 and 1121.

### **BIOL 6730 - Urban Ecol/Wildlife Mgmt**

**Credit Hours:** (3) **Description** Study of interrelations and management of organisms considered part of the wildlife realm (game and non-game) in urban environments; provides information required to understand ecological and wildlife issues in urban areas and to develop management strategies for maintaining sustainable natural resources on disturbed landscapes. Three lecture hours per week. **PREREQUISITE(S):** BIOL 3050 or permission of instructor.

### **BIOL 6740 - Mammalogy**

**Credit Hours:** (4) **Description** Classification, distribution, life histories, economic importance, techniques of field study, methods of collection and preservation of mammals. Two lecture, four laboratory hours per week.

**PREREQUISITE(S):** BIOL 1120 and 1121.

### **BIOL 6744 - Herpetology**

**Credit Hours:** (4) **Description** Classification, distribution, life histories, techniques of collection and preservation, natural habitats of North American reptiles and amphibians. Two lecture, four laboratory hours per week.

**PREREQUISITE(S):** BIOL 1120 and 1121.

### **BIOL 6800 - Marine Invertebrate Zool**

**Credit Hours:** (3) **Description** This course taught only at the Gulf Coast Research Laboratory, Ocean Spring, Mississippi. University of Memphis residence credit is given through affiliation with the Laboratory. Morphology, distribution, and ecology of the phyla from Protozoa through Protochordates. **PREREQUISITE(S):** Two semesters of biology or permission of instructor. **COREQUISITE(S):** BIOL 6801

### **BIOL 6801 - Marine Invertebrate Zoo Lab**

**Credit Hours:** (3) **Description** This course taught only at the Gulf Coast Research Laboratory, Ocean Springs, Mississippi. University of Memphis residence credit is given through affiliation with the Laboratory. Laboratory for BIOL 4800 - BIOL 6800. **PREREQUISITE(S):** Two semesters of biology or permission of instructor. **COREQUISITE(S):** BIOL 6800

### **BIOL 6802 - Elasmobranch Biology**

**Credit Hours:** (3) **Description** This course taught only at the Gulf Coast Research Laboratory, Ocean Springs, Mississippi. University of Memphis residence credit is given through affiliation with the Laboratory. An overview of the biology of sharks, skates, and rays. **PREREQUISITE(S):** Three semesters of biology, including marine biology, or permission of instructor. **COREQUISITE(S):** BIOL 6803

### **BIOL 6803 - Elasmobranch Biology Lab**

**Credit Hours:** (2) **Description** This course taught only at the Gulf Coast Research Laboratory, Ocean Springs, Mississippi. University of Memphis residence credit is given

through affiliation with the Laboratory. Laboratory for BIOL 4802 - BIOL 6802 **PREREQUISITE(S)**: Three semester of biology, including marine biology, or permission of instructor. **COREQUISITE(S)**: BIOL 6802

### **BIOL 6804 - Elasmobranch Physiology**

**Credit Hours:** (5) **Description** This course taught only at the Gulf Coast Research Laboratory, Ocean Springs, Mississippi. University of Memphis residence credit is given through affiliation with the Laboratory. Major physiological systems and unique aspects of shark, skate, and stingray physiology including specialized adaptations to the challenges of life in diverse aquatic habitats. **PREREQUISITE(S)**: Three semesters of biology, including marine biology, or permission of instructor.

### **BIOL 6806 - Marine Mammals**

**Credit Hours:** (3) **Description** This course taught only at the Gulf Coast Research Laboratory, Ocean Springs, Mississippi. University of Memphis residence credit is given through affiliation with the Laboratory. emphasis on natural history and population ecology of cetaceans. Includes life history, distribution, population dynamics, diet and feeding, social behavior, evolution, and zoo geography. **PREREQUISITE(S)**: Three semesters of biology. **COREQUISITE(S)**: BIOL 6807

### **BIOL 6807 - Marine Mammals Lab**

**Credit Hours:** (2) **Description** This course taught only at the Gulf Coast Research Laboratory, Ocean Spring, Mississippi. University of Memphis residence credit given through affiliation with the Laboratory. Laboratory for BIOL 4806 - BIOL 6806.

### **BIOL 6808 - Marine Ichthyology**

**Credit Hours:** (3) **Description** This course taught only at the Gulf Coast Research Laboratory, Ocean Springs, Mississippi. University of Memphis residence credit is given through affiliation with the Laboratory. Marine fishes including evolutionary relationships, morphology, physiology and zoo geography. **PREREQUISITE(S)**: Two semesters of biology and permission of instructor. **COREQUISITE(S)**: BIOL 6809

### **BIOL 6809 - Marine Ichthyology Lab**

**Credit Hours:** (3) **Description** This course taught only at the Gulf Coast Research Laboratory, Ocean Springs, Mississippi.

University of Memphis residence credit is given through affiliation with the Laboratory. Laboratory for BIOL 4808 - BIOL 6808. **PREREQUISITE(S)**: Two semesters of biology and permission of instructor. **COREQUISITE(S)**: BIOL 6808

### **BIOL 6810 - Field Exercises Coast Herpetol**

**Credit Hours:** (3) **Description** This course taught only at the Gulf Coast Research Laboratory, Ocean Springs, Mississippi. University of Memphis residence credit is given through affiliation with the Laboratory. Topics include the ecology, evolution, life history, diversity, behavior, and conservation of amphibians and reptiles. **PREREQUISITE(S)**: Two semesters of biology or permission of instructor.

### **BIOL 6844 - Parasites Marine Animals**

**Credit Hours:** (6) **Description** This course is taught only at the Gulf Coast Research Laboratory, Ocean Springs, Mississippi. University of Memphis residence credit is given through affiliation with the Laboratory. Parasites of marine animals with emphasis on morphology, taxonomy, life histories, and host parasite relationships. Lecture, laboratory and field work. **PREREQUISITE(S)**: General parasitology or consent of the instructor.

### **BIOL 6900 - Entomology**

**Credit Hours:** (4) **Description** Morphology, physiology, behavior, and ecology of insects. Three lecture, two laboratory hours per week; **PREREQUISITE(S)**: BIOL 1120 and 1121.

### **BIOL 7000 - Orientation Grad Stdy**

**Credit Hours:** (2) **Description** Source of literature in field of biology, data presentation, graphic techniques, and manuscript preparation. One lecture, two laboratory hours per week. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

### **BIOL 7004 - College Biol Teaching**

**Credit Hours:** (1) Former: (MMCS 7004-8004) **Description** (MMCS 7004-8004). Under faculty supervision, graduate students participate in teaching of laboratory sections of existing undergraduate courses in the biological sciences. Student's performance evaluated by faculty member in charge and appropriate grade assigned. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

## BIOL 7006 - Care/Humane Use Lab Animals

**Credit Hours:** (2) Former: (MMCS 7006-8006) **Description** (MMCS 7006-8006). Care and use of live vertebrate animals in research and teaching. Students must enroll in this course before working with live vertebrate animals; fulfills requirements of Federal Animal Welfare Act and NIH Guide. One lecture and two laboratory hours per week.

**PREREQUISITE(S):** Permission of instructor Grades of S, U, or IP will be given.

## BIOL 7007 - Exp Cell/Molec Biol Tchr

**Credit Hours:** (4) Former: (MMCS 7010) **Description** (MMCS 7010). Developing inquiry-based laboratory activities to teach basic concepts of cell and molecular biology in middle and high school settings; includes basic concepts, fundamental laboratory skills, and methods for designing inquiry-based laboratory exercises. NOTE: May not be applied to degree requirements. Two lecture, six laboratory hours per week. NOTE: May not be applied to degree requirements

## BIOL 7008 - Adv. Genomics & Bioinformatics

**Credit Hours:** (3) *Cross listing* (Same as BINF 7701) **Description** (Same as BINF 7701) Accelerated introduction to molecular and genomic sciences, covering basic concepts of gene and protein structure/function, genome sequencing and annotation, single nucleotide polymorphism, genetic variation, gene expression, and functional genomics and proteomics. Three lecture hours per week. **PREREQUISITE(S):** Permission of instructor.

## BIOL 7010 - Prin Meth Sys Biology

**Credit Hours:** (3) **Description** Systematic philosophies and numerical methods developed to deal with systematic and taxonomic problems; discussions of international rules, concept of species, and the roles and aims of practicing systematists; projects designed to give practical experience in analyzing data. Two lecture, two laboratory hours per week.

## BIOL 7011 - Adv Topics Wetland Ecol

**Credit Hours:** (3) **Description** Covers a range of current topics related to wetland science and issues at national and regional levels; includes site visits and case studies on selected wetlands. Two hours lecture and one laboratory/field

component. **PREREQUISITE(S):** BIOL 4054/BIOL 6054 or equivalent and permission of instructor.

## BIOL 7012 - Plant Ecophysiology

**Credit Hours:** (3) **Description** Covers various topics on plant responses to environmental factors, effects of global climate changes on plant health and functioning, and techniques used to quantify environmental variables and plant responses. Three lecture hours per week. **PREREQUISITE(S):** BIOL 3230 or equivalent and permission of instructor.

## BIOL 7014 - Tchng Skills Grad Asst

**Credit Hours:** (3) Former: (MMCS 7003-8003) **Description** (MMCS 7003-8003). Strategies and skills for effective college teaching; includes use of innovative approaches and computer-based instructional technology. May be repeated up to 12 credit hours. May not be applied to degree requirements. May be repeated up to 12 credit hours. May not be applied to degree requirements.

## BIOL 7015 - Aquaculture

**Credit Hours:** (3) **Description** Principles and procedures related to the culture of commercially important freshwater organisms under controlled conditions. Three lecture hours per week.

## BIOL 7016 - Mol Syst Ecology

**Credit Hours:** (3) **Description** Application of systematic and genetic theory to the understanding of past and present patterns and processes in animals, emphasizing laboratory analysis techniques to address a variety of questions on behavioral, ecological, and evolutionary biology. Two 2-hour combined lab/lectures per week.

## BIOL 7017 - Topics In Evolution

**Credit Hours:** (1-3) **Description** Lecture, readings, discussion, and oral presentation on evolutionary biology. May be repeated for a maximum of 9 credit hours for PhD students; 6 credit hours for MS students. May be repeated for a maximum of 9 credit hours for PhD students; 6 credit hours for MS students **PREREQUISITE(S):** Permission of instructor.

## BIOL 7018 - Topics In Physiology

**Credit Hours:** (1-3) **Description** Lecture, readings, discussion, and oral presentation on physiology. May be repeated for a maximum of 9 credit hours for PhD students; 6 credit hours for MS students. May be repeated for a maximum of 9 credit hours for PhD students; 6 credit hours for MS students **PREREQUISITE(S):** Permission of instructor.

### **BIOL 7019 - Topics In Animal Behavior**

**Credit Hours:** (1-3) **Description** Lecture, readings, discussion and oral presentation on animal biology. May be repeated for a maximum of 9 credit hours for PhD students; 6 credit hours for MS students. May be repeated for a maximum of 9 credit hours for PhD students; 6 credit hours for MS students **PREREQUISITE(S):** Permission of instructor.

### **BIOL 7020 - Topics In Ecology**

**Credit Hours:** (1-3) **Description** Lecture, readings, discussion, and oral presentation on ecology. May be repeated for a maximum of 9 credit hours for PhD students; 6 credit hours for MS students. May be repeated for a maximum of 9 credit hours for PhD students; 6 credit hours for MS students **PREREQUISITE(S):** Permission of instructor.

### **BIOL 7030 - Stem Cells: Culture/App**

**Credit Hours:** (3) Former: (BIOM 7030-8030) **Description** (BIOM 7030-8030) This course contains both theoretical and application based approaches to pluripotent, fetal and adult stem cells. Related topics include stemness, potency, differentiation, regenerative medicine, induced pluripotent stem cells, cancer stem cells, and the ethics of stem cell research. This course will survey modern methods for isolation, culture, and application of stem cells in research and medicine. Three lecture hours per week. Three lecture hours per week. **PREREQUISITE(S):** Permission of the instructor.

### **BIOL 7031 - Cell Physiology**

**Credit Hours:** (3) Former: (MMCS 7031-8031) **Description** (MMCS 7031-8031). Cellular thermodynamics, membrane transport systems, ion channels, oxidative phosphorylation, electron transport, cytoskeleton and mechanochemical coupling systems. Three lecture hours per week. Three lecture hours per week. **PREREQUISITE(S):** Permission of instructor.

### **BIOL 7040 - Light Microsc/Theory & Appl**

**Credit Hours:** (4) Former: (MMCS 7040-8040) **Description** (MMCS 7040-8040). Principles of bright field, fluorescence, confocal, two-photons and super resolution microscopy; methods to prepare specimen for bright field, fluorescence and live microscopy. Three hours lecture and two hours lab per week. Three hours lecture and two hours lab per week. **PREREQUISITE(S):** Permission of instructor.

### **BIOL 7051 - Vertebrate Cell Cult Tech**

**Credit Hours:** (3) Former: (MMCS 7051-8051) **Description** (MMCS 7051-8051). Theory, principles, and protocols in use of vertebrate cell cultures and cell lines in biomedical research. Three lecture hours per week. Three lecture hours per week. **PREREQUISITE(S):** Permission of instructor.

### **BIOL 7060 - BIOLOGICAL DATA ANALYSIS**

**Credit Hours:** 3 **Description** This course illustrates data analysis techniques used to answer questions in the biological sciences through case studies of real-world datasets from physiology, genomics, and biomedicine. Students gain hands-on experience answering biological questions via the writing and execution of computer code in the R/Bioconductor analysis environment. Specific applications include: evaluating effects of drugs on sleep duration, assessing insecticide efficacy, and diagnosing heart disease based on clinical measurements, among others. Students refine their understanding and gain additional experience with biological applications through assignments, a journal club, and a self-designed data analysis project. **PREREQUISITE(S):** BIOL 1010, MATH 4611, or instructor permission.

### **BIOL 7080 - Public Health Microbiol**

**Credit Hours:** (3) **Description** Overview of the nature of diseases threatening the public health of contemporary societies covering fundamental microbiology; microbe-human interactions; and emerging microbial diseases, common food-borne diseases, and pathogens for bioterrorism. Three lecture hours per week. Three lecture hours per week. **PREREQUISITE(S):** Permission of instructor.

### **BIOL 7092 - Research**

**Credit Hours:** (1-6) **Description** Consultation, reading, and laboratory work investigating selected topics in biology. Only 6 semester hours credit may be counted toward degree requirements for MS students seeking a thesis and 3 for MS students seeking a non-thesis degree; 9 semester hours credit for PhD students. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.



## BIOL 7093 - Problems In Zoology

**Credit Hours:** (3-6) **Description** Supervised research on specific problems in marine zoology for graduates.

**PREREQUISITE(S):** BIOL 6800 or BIOL 6600 Grades of S, U, or IP will be given.

## BIOL 7102 - Thesis Proposal

**Credit Hours:** (2) **Description** Preparation of a thesis project proposal in a grant format and an oral defense of the proposal. Students should not be concurrently enrolled for BIOL 7102 and BIOL 7200. **PREREQUISITE(S):** BIOL master's student Grades of S, U, or IP will be given.

## BIOL 7104 - SPECIATION

**Credit Hours:** 3 **Description** Survey course focused on the process of speciation, particularly in relation to geography, macroecology, and genetics. Course will use a combination of lecture and discussions of the primary literature. 0

## BIOL 7130 - Curr Lit Cell & Molec Biol

**Credit Hours:** (1) **Description** Lecture, readings, discussion, oral presentation from current cell and molecular biology research articles. May be repeated for a maximum of 3 credit hours for PhD students; 2 credit hours for MS students.

**PREREQUISITE(S):** Permission of instructor.

## BIOL 7131 - Cell & Molecular Biol

**Credit Hours:** (4) Former: (MMCS 7131-8131) **Description** (MMCS 7131-8131). Introduction to principles of molecular biology as they apply to eukaryotic cells including transcription, translation, regulation of protein function, DNA replication, membrane biogenesis, secretion, hormone action, signal transduction, and ligand receptor interaction. Four lecture hours per week. Four lecture hours per week.

## BIOL 7135 - Protein Trafficking

**Credit Hours:** (3) **Description** Modern theories of co-translational and post-translational protein targeting in eukaryotic cells to include function and evolution of classical trafficking pathway elements. Three lecture hours per week. Three lecture hours per week. **PREREQUISITE(S):** BIOL 3130 and BIOL 4512-BIOL 6512.

## BIOL 7140 - Receptors & Signaling

**Credit Hours:** (3) **Description** Develops state-of-the-art understanding of issues in cell receptors and signaling, covering receptor-ligand interactions including methods of identification and quantification; emphasizes specific characteristics of G protein-coupled receptors, receptor tyrosine kinases, and ligand-activate transcription factors including mechanisms of action and signaling pathways activated by each receptor. Three lecture hours per week. Three lecture hours per week.

## BIOL 7200 - Seminar In Biology

**Credit Hours:** (1) **Description** Student presentations of topics in biology. Open to Biology students only. Only 3 semester hours may be counted toward degree requirements for MS students, 5 for PhD students. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

## BIOL 7250 - Comm & Landscape Ecol

**Credit Hours:** (4) **Description** Distributions of organisms on worldwide and local basis with emphasis on factors influencing distribution and growth. Two lecture, four laboratory hours per week. Two lecture, four laboratory hours per week. **PREREQUISITE(S):** BIOL 3050 or consent of the instructor.

## BIOL 7290 - Molecular Computing

**Credit Hours:** (3) Former: (MMCS 7290-8290) *Cross listing* (Same as COMP 7290-COMP 8290) **Description** (MMCS 7290-8290). (Same as COMP 7290-8290). Basics of cell biology and genetics (DNA structure and enzymes, replication, and translation); feasible DNA-based solution of hard computational problems; issues in the design of molecular computers; foundations of nanotechnology. **PREREQUISITE(S):** COMP 6030 or permission of instructor.

## BIOL 7331 - Photosynthesis

**Credit Hours:** (2) Former: (MMCS 7331-8331) **Description** (MMCS 7331-8331). Lectures and readings on modern theory of photosynthesis; includes such topics as chloroplast structure and function; chemistry and photo-chemistry of chlorophyll; influence of external factors on rate of photosynthesis, absorption, fluorescence, and luminescence; energy storage; efficiency; carbon fixation; photosynthesis in cell extracts; phosphorylation. Two lecture hours per week. Two lecture hours per week.

### **BIOL 7335 - Hormones And Behavior**

**Credit Hours:** (3) **Description** Examines the relationship between endocrinology and behavior in animals and humans and how this relationship underlies survival and reproduction. Three lecture hours per week. Three lecture hours per week. **PREREQUISITE(S):** Endocrinology (BIOL 4630-BIOL 6630) or permission of instructor.

### **BIOL 7338 - Biological Clocks**

**Credit Hours:** (3) **Description** A consideration of the biological clocks that generate daily, lunar, seasonal and annual rhythms in various animals including people. Emphasis on neuroendocrine substrates, development and adaptive significance of reproductive cycles, feeding rhythms, sleep-wakefulness cycles, hibernation cycles, body weight and migratory cycles. Three lecture hours per week. **PREREQUISITE(S):** Graduate standing and Permission of instructor.

### **BIOL 7340 - Behavioral Ecology**

**Credit Hours:** (3) **Description** Examines the influence of natural selection on animals' ability to exploit resources, avoid predators, secure mates, rear offspring, and communicate with conspecifics. Three lecture hours per week.

### **BIOL 7345 - Animal Communication**

**Credit Hours:** (3) **Description** Examination of the relationship between evolutionary ecology and animal communication to investigate how animal interactions with conspecifics affect their behavior. A rudimentary knowledge of animal behavior, animal psychology, or ecology is recommended. Three lecture hours per week. N/A Standard Letter

### **BIOL 7350 - Evolutionary Ecology**

**Credit Hours:** (3) **Description** Provides the basic foundation for applying genetic and evolutionary theory to the ecology of plants and animals; emphasis on genetic and phenotypic adaptations of plants and animals to their environment. Three lecture hours per week.

### **BIOL 7360 - Plant And Environment**

**Credit Hours:** (3) **Description** Discusses plant responses to environmental changes and potential effects of global climate changes on plant health and function. Two lecture, two

laboratory hours per week. **PREREQUISITE(S):** plant physiology (BIOL 3230 or equivalent), plant ecology (BIOL 4053-BIOL 6053 or equivalent), or permission of instructor.

### **BIOL 7370 - Wetland Ecol & Mgmt**

**Credit Hours:** (3) **Description** A wide range of topics relating to wetland science and issues at national and regional levels, including wetland classification, hydrology, and biochemistry, with special emphasis on regional bottomland forests. Two lecture, two laboratory hours per week. **PREREQUISITE(S):** wetland ecology (BIOL 4054-BIOL 6054) or equivalent or permission of instructor.

### **BIOL 7400 - Comparative Immunology**

**Credit Hours:** (3) Former: (MMCS 7400-8400) **Description** (MMCS 7400-8400). Phylogenesis and development of the defensive immune systems of invertebrates and the vertebrate classes. Three lecture hours per week. **PREREQUISITE(S):** BIOL 4445-BIOL 6445 or permission of instructor.

### **BIOL 7440 - Molecular Biol/Cancer**

**Credit Hours:** (3) **Description** Introduction to molecular basis of cancer, cancer therapy and prevention; includes disease-, chemical carcinogen-, and viral-based views of cancer process; surveys modern tools for identifying cancer susceptibility genes and classifying tumors. Three lecture hours per week. **PREREQUISITE(S):** BIOL 4503-BIOL 6503 or BIOL 4470-BIOL 6470, or permission of instructor.

### **BIOL 7464 - Advanced Immunology**

**Credit Hours:** (4) Former: (MMCS 7464-8464) **Description** (MMCS 7464-8464). Selected topics and laboratories in molecular and cellular immunology, immunobiology, tumor immunology, and medical aspects of immunology. Three lecture, two laboratory hours per week. **PREREQUISITE(S):** BIOL 6445 and BIOL 6511 or their equivalent.

### **BIOL 7470 - Adv Bacterial Genetics**

**Credit Hours:** (3) Former: (MMCS 7470-8470) **Description** (MMCS 7470-8470). Advanced studies in the molecular basis of bacterial genetics; including mutation and bacterial repair systems, complementation analysis, recombination, gene transfer mechanisms, gene conversion and marker effects, insertional elements, phase variation, and bacteriophage genetics. Three lecture hours per week. **PREREQUISITE(S):** BIOL 6470 or equivalent.

## BIOL 7501 - Topics in Systematics

**Credit Hours:** 1-3

**Description** Lecture, readings, discussion, and oral presentations on systematic biology. The course will consist of in-class discussions of recent journal articles. Each week a different student will present an article and lead the discussion. Students will first submit the article for instructor approval. Upon receiving approval, students will read the article thoroughly along with any necessary background material needed for understanding. They will then create and give a PowerPoint presentation (20-25 minutes + 5-10 minutes for questions/discussion) that provides background on the research area, clearly describes the biological data and analysis technique(s) used, and critically assesses the research methodology and conclusions drawn by the authors. May be repeated for a maximum of 9 credit hours for PhD students; 6 credit hours for MS students. **PREREQUISITE(S):** Permission of instructor

**COREQUISITE(S):** Elementary courses in organismal botany or zoology useful, but not required.

## BIOL 7530 - Bacterial Physiology

**Credit Hours:** (3) Former: (MMCS 7530-8530) **Description** (MMCS 7530-8530). Bacterial physiology including growth, nutrition, biosynthesis, biodegradation, and adaptation. Three lecture hours per week.

## BIOL 7550 - Food & Indust Toxicol

**Credit Hours:** (3) Former: (MMCS 7550-8550) **Description** (MMCS 7550-8550). Principles and methodology of genotoxicity; assessment of toxic substances in animal and plant foodstuffs, and in industrial wastes; fungal and bacterial contaminants, food additives, and food processing; biotransformation and health impacts are emphasized. Three lecture hours per week.

## BIOL 7600 - Thesis Defense Seminar

**Credit Hours:** (1) **Description** Selected topics in the biological sciences. Credit is earned when the results of the student's thesis work is presented. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

## BIOL 7610 - Environ Effects On Devel

**Credit Hours:** (2) **Description** Environment-gene interactions and developmental plasticity; evolutionary,

physiological, morphological, and ecological consequences of these interactions. Two lecture hours per week.

## BIOL 7700-7740 - Special Topics in Biology

**Credit Hours:** (1-4) **Description** Current topics of special interest in biology **PREREQUISITE(S):** Permission of instructor.

## BIOL 7750 - Population Ecology

**Credit Hours:** (3) **Description** Examination and quantification of the processes that influence population dynamics. Three lecture hours per week. **PREREQUISITE(S):** BIOL 3050 or equivalent.

## BIOL 7751 - Conservation Biology

**Credit Hours:** (4) **Description** Application of biological principles towards the conservation of natural systems and the organisms they contain. Two lecture, four laboratory hours per week. **PREREQUISITE(S):** Permission of the instructor.

## BIOL 7752 - Ecological Genetics

**Credit Hours:** (3) **Description** The field of Ecological Genetics sits at the interface of studies of natural genetic variation, molecular function, and the environmental context that surrounds them. We will explore methods that assess genetic diversity and the adaptive value of ecologically relevant traits. Topics will include population/quantitative genetics, life history variation, natural selection, conservation, and applied ecological genetics. Students will be introduced to computational resources and tools during tutorials. Students will also read relevant primary literature and participate in live chat/discussions with the study authors. **PREREQUISITE(S):** Permission of instructor.

## BIOL 7996 - Thesis

**Credit Hours:** (1-6) **Description** Research contributing to the development of the MS thesis. Only 6 semester hours may be counted toward degree requirements. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

## BIOL 8000 - Orientation Grad Stdy

**Credit Hours:** (2) **Description** Source of literature in field of biology, data presentation, graphic techniques, and manuscript preparation. One lecture, two laboratory hours per week.

Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

### **BIOL 8004 - College Biol Teaching**

**Credit Hours:** (1) Former: (MMCS 7004-8004) **Description** (MMCS 7004-8004). Under faculty supervision, graduate students participate in teaching of laboratory sections of existing undergraduate courses in the biological sciences. Student's performance evaluated by faculty member in charge and appropriate grade assigned. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

### **BIOL 8006 - Care/Humane Use Lab Animals**

**Credit Hours:** (2) Former: (MMCS 7006-8006) **Description** (MMCS 7006-8006). Care and use of live vertebrate animals in research and teaching. Students must enroll in this course before working with live vertebrate animals; fulfills requirements of Federal Animal Welfare Act and NIH Guide. One lecture and two laboratory hours per week. **PREREQUISITE(S):** Permission of instructor Grades of S, U, or IP will be given.

### **BIOL 8007 - Exp Cell/Molec Biol Tchrg**

**Credit Hours:** (4) Former: (MMCS 7010) **Description** (MMCS 7010). Developing inquiry-based laboratory activities to teach basic concepts of cell and molecular biology in middle and high school settings; includes basic concepts, fundamental laboratory skills, and methods for designing inquiry-based laboratory exercises. NOTE: May not be applied to degree requirements. Two lecture, six laboratory hours per week. Two lecture, six laboratory hours per week.

### **BIOL 8010 - Prin Meth Sys Biology**

**Credit Hours:** (3) **Description** Systematic philosophies and numerical methods developed to deal with systematic and taxonomic problems; discussions of international rules, concept of species, and the roles and aims of practicing systematists; projects designed to give practical experience in analyzing data. Two lecture, two laboratory hours per week.

### **BIOL 8011 - Adv Topics Wetland Ecol**

**Credit Hours:** (3) **Description** Covers a range of current topics related to wetland science and issues at national and regional levels; includes site visits and case studies on selected wetlands. Two hours lecture and one laboratory/field

component. **PREREQUISITE(S):** BIOL 4054/BIOL 6054 or equivalent and permission of instructor.

### **BIOL 8012 - Plant Ecophysiology**

**Credit Hours:** (3) **Description** Covers various topics on plant responses to environmental factors, effects of global climate changes on plant health and functioning, and techniques used to quantify environmental variables and plant responses. Three lecture hours per week. **PREREQUISITE(S):** BIOL 3230 or equivalent and permission of instructor.

### **BIOL 8014 - Tchng Skills Grad Asst**

**Credit Hours:** (3) Former: (MMCS 7003-8003) **Description** (MMCS 7003-8003). Strategies and skills for effective college teaching; includes use of innovative approaches and computer-based instructional technology. May be repeated up to 12 credit hours. May not be applied to degree requirements. May be repeated up to 12 credit hours. May not be applied to degree requirements

### **BIOL 8015 - Aquaculture**

**Credit Hours:** (3) **Description** Principles and procedures related to the culture of commercially important freshwater organisms under controlled conditions

### **BIOL 8015 - Aquaculture**

**Credit Hours:** (3) **Description** Principles and procedures related to the culture of commercially important freshwater organisms under controlled conditions. Three lecture hours per week.

### **BIOL 8016 - Mol Syst Ecology**

**Credit Hours:** (3) **Description** Application of systematic and genetic theory to the understanding of past and present patterns and processes in animals, emphasizing laboratory analysis techniques to address a variety of questions on behavioral, ecological, and evolutionary biology. Two 2-hour combined lab/lectures per week.

### **BIOL 8017 - Topics In Evolution**

**Credit Hours:** (1-3) **Description** Lecture, readings, discussion, and oral presentation on evolutionary biology. May be repeated for a maximum of 9 credit hours for PhD students; 6 credit hours for MS students. May be repeated for a maximum of 9 credit hours for PhD students; 6 credit hours

for MS students **PREREQUISITE(S):** Permission of instructor.

### **BIOL 8018 - Topics In Physiology**

**Credit Hours:** (1-3) **Description** Lecture, readings, discussion, and oral presentation on physiology. May be repeated for a maximum of 9 credit hours for PhD students; 6 credit hours for MS students. May be repeated for a maximum of 9 credit hours for PhD students; 6 credit hours for MS students **PREREQUISITE(S):** Permission of instructor.

### **BIOL 8019 - Topics In Animal Behavior**

**Credit Hours:** (1-3) **Description** Lecture, readings, discussion and oral presentation on animal biology. May be repeated for a maximum of 9 credit hours for PhD students; 6 credit hours for MS students. May be repeated for a maximum of 9 credit hours for PhD students; 6 credit hours for MS students **PREREQUISITE(S):** Permission of instructor.

### **BIOL 8020 - Topics In Ecology**

**Credit Hours:** (1-3) **Description** Lecture, readings, discussion, and oral presentation on ecology. May be repeated for a maximum of 9 credit hours for PhD students; 6 credit hours for MS students. May be repeated for a maximum of 9 credit hours for PhD students; 6 credit hours for MS students

### **BIOL 8030 - Stem Cells: Culture/App**

**Credit Hours:** (3) Former: (BIOM 7030-8030) **Description** (BIOM 7030-8030) This course contains both theoretical and application based approaches to pluripotent, fetal and adult stem cells. Related topics include stemness, potency, differentiation, regenerative medicine, induced pluripotent stem cells, cancer stem cells, and the ethics of stem cell research. This course will survey modern methods for isolation, culture, and application of stem cells in research and medicine. Three lecture hours per week. **PREREQUISITE(S):** Permission of the instructor.

### **BIOL 8031 - Cell Physiology**

**Credit Hours:** (3) Former: (MMCS 7031-8031) **Description** (MMCS 7031-8031). Cellular thermodynamics, membrane transport systems, ion channels, oxidative phosphorylation, electron transport, cytoskeleton and mechanochemical coupling systems. Three lecture hours per week. **PREREQUISITE(S):** Permission of instructor.

### **BIOL 8040 - Light Microsc/Theory & Appl**

**Credit Hours:** (4) Former: (MMCS 7040-8040) **Description** (MMCS 7040-8040). Principles of bright field, fluorescence, confocal, two-photon and super resolution microscopy; methods to prepare specimen for bright field, fluorescence and live microscopy. Three hours lecture and two hours lab per week. **PREREQUISITE(S):** Permission of instructor.

### **BIOL 8051 - Vertebrate Cell Cultr Tech**

**Credit Hours:** (3) Former: (MMCS 7051-8051) **Description** (MMCS 7051-8051). Theory, principles, and protocols in use of vertebrate cell cultures and cell lines in biomedical research. Three lecture hours per week. **PREREQUISITE(S):** Permission of instructor.

### **BIOL 8060 - BIOLOGICAL DATA ANALYSIS**

**Credit Hours:** 3 **Description** This course illustrates data analysis techniques used to answer questions in the biological sciences through case studies of real-world datasets from physiology, genomics, and biomedicine. Students gain hands-on experience answering biological questions via the writing and execution of computer code in the R/Bioconductor analysis environment. Specific applications include: evaluating effects of drugs on sleep duration, assessing insecticide efficacy, and diagnosing heart disease based on clinical measurements, among others. Students refine their understanding and gain additional experience with biological applications through assignments, a journal club, and a self-designed data analysis project. **PREREQUISITE(S):** BIOL1010, MATH4611, or instructor permission.

### **BIOL 8080 - Public Health Microbiol**

**Credit Hours:** (3) **Description** Overview of the nature of diseases threatening the public health of contemporary societies covering fundamental microbiology; microbe-human interactions; and emerging microbial diseases, common food-borne diseases, and pathogens for bioterrorism. Three lecture hours per week. **PREREQUISITE(S):** Permission of instructor.

### **BIOL 8092 - Research**

**Credit Hours:** (1-6) **Description** Consultation, reading, and laboratory work investigating selected topics in biology. Only 6 semester hours credit may be counted toward degree requirements for MS students seeking a thesis and 3 for MS students seeking a non-thesis degree; 9 semester hours credit

for PhD students. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

### **BIOL 8103 - Dissertation Proposal**

**Credit Hours:** (3) Former: (MMCS 8100) **Description** (MMCS 8100). Preparation of a dissertation project proposal in the NIH grant format and an oral defense of the proposal. **PREREQUISITE(S):** BIOL doctoral student Grades of S, U, or IP will be given.

### **BIOL 8104 - SPECIATION**

**Credit Hours:** 3 **Description** Survey course focused on the process of speciation, particularly in relation to geography, macroecology, and genetics. Course will use a combination of lecture and discussions of the primary literature.

### **BIOL 8130 - Curr Lit Cell & Molec Biol**

**Credit Hours:** (1) **Description** Lecture, readings, discussion, oral presentation from current cell and molecular biology research articles. May be repeated for a maximum of 3 credit hours for PhD students; 2 credit hours for MS students. May be repeated for a maximum of 3 credit hours for PhD students; 2 credit hours for MS students **PREREQUISITE(S):** Permission of instructor.

### **BIOL 8131 - Cell & Molecular Biol**

**Credit Hours:** (4) Former: (MMCS 7131-8131) **Description** (MMCS 7131-8131). Introduction to principles of molecular biology as they apply to eukaryotic cells including transcription, translation, regulation of protein function, DNA replication, membrane biogenesis, secretion, hormone action, signal transduction, and ligand receptor interaction. Four lecture hours per week.

### **BIOL 8135 - Protein Trafficking**

**Credit Hours:** (3) **Description** Modern theories of co-translational and post-translational protein targeting in eukaryotic cells to include function and evolution of classical trafficking pathway elements. Three lecture hours per week. **PREREQUISITE(S):** BIOL 3130 and BIOL 4512-BIOL 6512.

### **BIOL 8140 - Receptors & Signaling**

**Credit Hours:** (3) **Description** Develops state-of-the-art understanding of issues in cell receptors and signaling,

covering receptor-ligand interactions including methods of identification and quantification; emphasizes specific characteristics of G protein-coupled receptors, receptor tyrosine kinases, and ligand-activate transcription factors including mechanisms of action and signaling pathways activated by each receptor. Three lecture hours per week.

### **BIOL 8200 - Seminar In Biology**

**Credit Hours:** (1) **Description** Student presentations of topics in biology. Open to Biology students only. Only 3 semester hours may be counted toward degree requirements for MS students, 5 for PhD students. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

### **BIOL 8250 - Comm & Landscape Ecol**

**Credit Hours:** (4) **Description** Distributions of organisms on worldwide and local basis with emphasis on factors influencing distribution and growth. Two lecture, four laboratory hours per week. **PREREQUISITE(S):** BIOL 3050 or consent of the instructor.

### **BIOL 8290 - Molecular Computing**

**Credit Hours:** (3) Former: (MMCS 7290-8290) *Cross listing* (Same as COMP 7290-COMP 8290) **Description** (MMCS 7290-8290). (Same as COMP 7290-8290). Basics of cell biology and genetics (DNA structure and enzymes, replication, and translation); feasible DNA-based solution of hard computational problems; issues in the design of molecular computers; foundations of nanotechnology. **PREREQUISITE(S):** COMP 6030 or permission of instructor.

### **BIOL 8331 - Photosynthesis**

**Credit Hours:** (2) Former: (MMCS 7331-8331) **Description** (MMCS 7331-8331). Lectures and readings on modern theory of photosynthesis; includes such topics as chloroplast structure and function; chemistry and photo-chemistry of chlorophyll; influence of external factors on rate of photosynthesis, absorption, fluorescence, and luminescence; energy storage; efficiency; carbon fixation; photosynthesis in cell extracts; phosphorylation. Two lecture hours per week.

### **BIOL 8335 - Hormones And Behavior**

**Credit Hours:** (3) **Description** Examines the relationship between endocrinology and behavior in animals and humans and how this relationship underlies survival and reproduction.

Three lecture hours per week. **PREREQUISITE(S):** Endocrinology (BIOL 4630-BIOL 6630) or permission of instructor.

### **BIOL 8338 - Biological Clocks**

**Credit Hours:** (3) **Description** A consideration of the biological clocks that generate daily, lunar, seasonal and annual rhythms in various animals including people. Emphasis on neuroendocrine substrates, development and adaptive significance of reproductive cycles, feeding rhythms, sleep-wakefulness cycles, hibernation cycles, body weight and migratory cycles. Three lecture hours per week.

**PREREQUISITE(S):** Graduate standing and Permission of instructor.

### **BIOL 8340 - Behavioral Ecology**

**Credit Hours:** (3) **Description** Examines the influence of natural selection on animals' ability to exploit resources, avoid predators, secure mates, rear offspring, and communicate with conspecifics. Three lecture hours per week.

### **BIOL 8345 - Animal Communication**

**Credit Hours:** (3) **Description** Examination of the relationship between evolutionary ecology and animal communication to investigate how animal interactions with conspecifics affect their behavior. A rudimentary knowledge of animal behavior, animal psychology, or ecology is recommended. Three lecture hours per week. Three lecture hours per week. N/A **PREREQUISITE(S):** N/A **COREQUISITE(S):** N/A **PREREQUISITE(S)** or **COREQUISITE(S):** N/A Standard Letter

### **BIOL 8350 - Evolutionary Ecology**

**Credit Hours:** (3) **Description** Provides the basic foundation for applying genetic and evolutionary theory to the ecology of plants and animals; emphasis on genetic and phenotypic adaptations of plants and animals to their environment. Three lecture hours per week. Three lecture hours per week.

### **BIOL 8360 - Plant And Environment**

**Credit Hours:** (3) **Description** Discusses plant responses to environmental changes and potential effects of global climate changes on plant health and function. Two lecture, two laboratory hours per week. Two lecture, two laboratory hours per week. **PREREQUISITE(S):** plant physiology (BIOL

2330 or equivalent), plant ecology (BIOL 4053-BIOL 6053 or equivalent), or permission of instructor.

### **BIOL 8370 - Wetland Ecol & Mgmt**

**Credit Hours:** (3) **Description** A wide range of topics relating to wetland science and issues at national and regional levels, including wetland classification, hydrology, and biochemistry, with special emphasis on regional bottomland forests. Two lecture, two laboratory hours per week. Two lecture, two laboratory hours per week. **PREREQUISITE(S):** wetland ecology (BIOL 4054-BIOL 6054) or equivalent or permission of instructor.

### **BIOL 8400 - Comparative Immunology**

**Credit Hours:** (3) Former: (MMCS 7400-8400) **Description** (MMCS 7400-8400). Phylogenesis and development of the defensive immune systems of invertebrates and the vertebrate classes. Three lecture hours per week. Three lecture hours per week. **PREREQUISITE(S):** BIOL 4445-BIOL 6445 or permission of instructor.

### **BIOL 8440 - Molecular Biol/Cancer**

**Credit Hours:** (3) **Description** Introduction to molecular basis of cancer, cancer therapy and prevention; includes disease-, chemical carcinogen-, and viral-based views of cancer process; surveys modern tools for identifying cancer susceptibility genes and classifying tumors. Three lecture hours per week. Three lecture hours per week. **PREREQUISITE(S):** BIOL 4503-BIOL 6503 or BIOL 4470-BIOL 6470, or permission of instructor.

### **BIOL 8464 - Advanced Immunology**

**Credit Hours:** (4) Former: (MMCS 7464-8464) **Description** (MMCS 7464-8464). Selected topics and laboratories in molecular and cellular immunology, immunobiology, tumor immunology, and medical aspects of immunology. Three lecture, two laboratory hours per week. Three lecture, two laboratory hours per week. **PREREQUISITE(S):** BIOL 6445 and BIOL 6511 or their equivalent.

### **BIOL 8470 - Adv Bacterial Genetics**

**Credit Hours:** (3) Former: (MMCS 7470-8470) **Description** (MMCS 7470-8470). Advanced studies in the molecular basis of bacterial genetics; including mutation and bacterial repair systems, complementation analysis, recombination, gene transfer mechanisms, gene conversion and marker effects,

insertional elements, phase variation, and bacteriophage genetics. Three lecture hours per week. Three lecture hours per week. **PREREQUISITE(S):** BIOL 6470 or equivalent.

### **BIOL 8501 - Topics in Systematics**

**Credit Hours:** 1-3 *Cross listing* Not Applicable **Description** Lecture, readings, discussion, and oral presentations on systematic biology. The course will consist of in-class discussions of recent journal articles. Each week a different student will present an article and lead the discussion. Students will first submit the article for instructor approval. Upon receiving approval, students will read the article thoroughly along with any necessary background material needed for understanding. They will then create and give a PowerPoint presentation (20-25 minutes + 5-10 minutes for questions/discussion) that provides background on the research area, clearly describes the biological data and analysis technique(s) used, and critically assesses the research methodology and conclusions drawn by the authors. May be repeated for a maximum of 9 credit hours  
**PREREQUISITE(S):** Permission of Instructor.  
**COREQUISITE(S):** Elementary courses in organismal botany or zoology useful, but not required

### **BIOL 8530 - Bacterial Physiology**

**Credit Hours:** (3) Former: (MMCS 7530-8530) **Description** (MMCS 7530-8530). Bacterial physiology including growth, nutrition, biosynthesis, biodegradation, and adaptation. Three lecture hours per week. Three lecture hours per week.

### **BIOL 8550 - Food & Indust Toxicol**

**Credit Hours:** (3) Former: (MMCS 7550-8550) **Description** (MMCS 7550-8550). Principles and methodology of genotoxicity; assessment of toxic substances in animal and plant foodstuffs, and in industrial wastes; fungal and bacterial contaminants, food additives, and food processing; biotransformation and health impacts are emphasized. Three lecture hours per week. Three lecture hours per week.

### **BIOL 8600 - Dissertation Defense Seminar**

**Credit Hours:** (1) **Description** Selected topics in the biological sciences. Credit is earned when the results of the student's thesis work is presented. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

### **BIOL 8610 - Environ Effects On Devel**

**Credit Hours:** (2) **Description** Environment-gene interactions and developmental plasticity; evolutionary, physiological, morphological, and ecological consequences of these interactions. Two lecture hours per week. Two lecture hours per week.

### **BIOL 8700-8740 - Special Topics in Biology**

**Credit Hours:** (1-4) **Description** Current topics of special interest in biology **PREREQUISITE(S):** Permission of instructor.

### **BIOL 8750 - Population Ecology**

**Credit Hours:** (3) **Description** Examination and quantification of the processes that influence population dynamics. Three lecture hours per week. Three lecture hours per week. **PREREQUISITE(S):** BIOL 3050 or equivalent.

### **BIOL 8751 - Conservation Biology**

**Credit Hours:** (4) **Description** Application of biological principles towards the conservation of natural systems and the organisms they contain. Two lecture, four laboratory hours per week. Two lecture, four laboratory hours per week. **PREREQUISITE(S):** Permission of the instructor.

### **BIOL 8752 - Ecological Genetics**

**Credit Hours:** (3) **Description** The field of Ecological Genetics sits at the interface of studies of natural genetic variation, molecular function, and the environmental context that surrounds them. We will explore methods that assess genetic diversity and the adaptive value of ecologically relevant traits. Topics will include population/quantitative genetics, life history variation, natural selection, conservation, and applied ecological genetics. Students will be introduced to computational resources and tools during tutorials. Students will also read relevant primary literature and participate in live chat/discussions with the study authors.  
**PREREQUISITE(S):** Permission of instructor.

### **BIOL 9000 - Doc Res & Dissert**

**Credit Hours:** (1-10) **Description** The dissertation must be an independent research project applying a mastery of the techniques of scientific research. It must be a distinct and new contribution to the body of scientific knowledge. A maximum total of 18 hours may be counted toward degree requirements. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.



## Biomedical Engineering

### BIOM 6110 - Science of Medicine

**Credit Hours:** (3) **Description** Integration of fundamental principles from physics, chemistry, biology and mathematics, and applications of these principles to solve problems in medicine.

### BIOM 6150 - Engr Tools Design Med Devices

**Credit Hours:** (3) **Description** Major tools that engineers use to assist them in producing good medical device products, and how and where these tools are being used in industry.

### BIOM 6205 - Intro Biomed and Chem Sensors

**Credit Hours:** (4) **Description** Measurement techniques, recognition processes; application of chemical sensors and biosensors for analysis of real samples.

### BIOM 6210 - Research Studies

**Credit Hours:** (1-3) **Description** Consultation, reading, laboratory, and design work to investigate selected areas of biomedical engineering under supervision of faculty member, emphasizing laboratory work, design, and scientific writing. Formal paper required.

### BIOM 6393 - Appld Finite Element Analysis

**Credit Hours:** (3) *Cross listing* (Same as MECH 4393)  
**Description** (Same as MECH 4393). Fundamental topics associated with use of finite element analysis in mechanical and biomedical engineering applications; introduction to finite element theory, model generation, CAD interfacing, post-processing of results and validation.

### BIOM 6702 - Biotechn Tools for BME Res

**Credit Hours:** (3) **Description** Biochemical and biophysical measurement techniques; light spectroscopy, gel exclusion and affinity chromatography, electrophoresis, ELISA, protein and DNA methods. 6 hours lab.

### BIOM 6720 - Bioelectricity

**Credit Hours:** (4) **Description** Bioelectricity, including calculations of potential fields resulting from cardiac or neural electrogeneration, treatment of how heart and nerves generate and propagate electrical signals.

### BIOM 6750 - Biomechanics

**Credit Hours:** (4) Former: 6750

*Cross listing* MECH 6350 **Description** Application of mechanical principles to the human body, with focus on joint function, muscle force transmission and generation, gait, soft-tissue mechanics, injury mechanisms and risk, and experimental measurements. Engineering

**PREREQUISITE(S):** CIVIL 3322 or MECH 2320  
MATH 2110 or MATH 2422

MATH 2120 or MATH 3402

### BIOM 6801 - Introduction to Medical Imaging

**Credit Hours:** 4 *Cross listing* Not cross listed. **Description** This course will introduce fundamentals of the four most-important clinical medical imaging modalities: X-ray, Radionuclide, Ultrasound, and MRI. The primary focus is on the physical principles, instrumentation methods, imaging algorithms, and clinical applications of each imaging modality. Engineering **PREREQUISITE(S):**

- PHYS 2110, PHYS 2120
- MATH 1920, MATH 2110

### BIOM 6802 - Assertion- Evidence Model for Presentations in Engineering and Science

**Credit Hours:** 2 **Description** This course will provide training and practice in delivering scientific presentations to diverse audiences. Students will design and deliver presentations of scientific data for different audience categories. Engineering **PREREQUISITE(S):** ENGL 2201/2202

### BIOM 6900-6919 - Special Topics in Biomedical Engineering I

**Credit Hours:** (1-3) **Description** Topics are varied and are announced in the online class listings.

### BIOM 7004 - Life Sciences Biom I

**Credit Hours:** (3) **Description** This introduction and application to aspects of the entire body provides engineers and physical scientists with an understanding of aspects of the chemical, physical, and mechanical basis of cell shape, function, and motility; integrated treatment of topics in cellular biochemistry, protein synthesis, energy releasing pathways, and membrane biophysics.

### **BIOM 7005 - Life Sciences Biom II**

**Credit Hours:** (3) **Description** Continuation of 7004-8004. An introduction for engineers and physical scientists to aspects of systemic physiology with an emphasis on and connections to biomedical engineering.

### **BIOM 7030 - Stem Cells: Culture/AppI**

**Credit Hours:** (3) Former: (BIOL 7030-8030) **Description** (BIOL 7030-8030) This course contains both theoretical and application based approaches to pluripotent, fetal and adult stem cells. Related topics include stemness, potency, differentiation, regenerative medicine, induced pluripotent stem cells, cancer stem cells, and the ethics of stem cell research. This course will survey modern methods for isolation, culture, and application of stem cells in research and medicine. Three lecture hours per week.

### **BIOM 7101 - Biomed Engr Analysis I**

**Credit Hours:** (3) **Description** Analytical and numerical solution techniques used in analysis of biomedical engineering problems; introduction to modern computational software packages for experience with modern problem-solving methods.

### **BIOM 7103 - Theory Continuous Media**

**Credit Hours:** (3) **Description** Analysis of stress and deformation at a point; derivation of the fundamental equations in tensor notation by application of the basic laws of conservation of mass, energy, and momentum in mechanics and thermodynamics.

### **BIOM 7105 - Physiol Control Sys**

**Credit Hours:** (3) **Description** Modeling, representation, and analysis of physiological control systems, using control theory techniques; application will be modeling and control problems in cellular and general physiology; introduces basic concepts of control systems (transfer functions, feedback control system using root locus, frequency response methods); discusses

various biological systems and their natural and driven control mechanisms.

### **BIOM 7110 - Biostatistics**

**Credit Hours:** (3) **Description** Introduction to statistical techniques used for analysis of basic and clinical biomedical engineering data; sampling theory, hypothesis testing, ANOVA, and nonparametric techniques.

### **BIOM 7114 - Professional Dvlpmnt**

**Credit Hours:** (3) **Description** Weekly presentations of biomedical engineering research by visiting faculty and invited speakers; weekly presentations by graduate students and discussions of graduate student research in journal clubs; required of all full-time graduate students. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

### **BIOM 7116 - Math Model Biol Phenomn**

**Credit Hours:** (3) **Description** Applications of mathematics to the understanding of biological systems in biomedical engineering and modern biology; basic concepts of mathematical modeling development and validation; realistic examples of mathematical models in biology.

### **BIOM 7203 - Bioelectricity**

**Credit Hours:** (3) **Description** Introduction to electrical propagation through human tissue; membrane biophysics, action potentials, subthreshold stimuli, electrophysiology of heart, and neuromuscular junction.

### **BIOM 7209 - Biom Msrmnt/Instrmnt**

**Credit Hours:** (3) **Description** Measurement techniques applicable in biomedical engineering; data acquisition system, mechanical instrumentation, interface systems, signal analyses; biocompatibility requirements.

### **BIOM 7222 - Biosensors**

**Credit Hours:** (3) **Description** Provides graduate and upper-level students deeper understanding of chemical sensors and biosensors, with special emphasis on electrochemical biosensors and their in-vivo applications. The lectures and laboratory work will provide the theoretical basis and hands-on experience with macro and micro sensors and their fabrications.

### **BIOM 7301 - Functional Anatomy I**

**Credit Hours:** (1) **Description** Application of engineering principles to functional anatomy and pathological processes of the axial and appendicular skeleton with focus on hip/pelvis, knee, foot and ankle anatomy and applied biomechanics.

### **BIOM 7302 - Functional Anatomy II**

**Credit Hours:** (1) **Description** Application of engineering principles to functional anatomy and pathological processes of the axial and appendicular skeleton with focus on spine, shoulder, elbow, wrist and hand functional anatomy and applied biomechanics.

### **BIOM 7303 - Mvmt/Jnt/Implnt Mech**

**Credit Hours:** (3) **Description** The course consists of the following sections; muscle and bone anthropometry; kinetics; the link model, mechanical work, energy, and power; kinematics and dynamics of rigid bodies; and the development of mechanically equivalent models of the human musculoskeletal system.

### **BIOM 7305 - Adv Image Instrmntn**

**Credit Hours:** (3) **Description** Presents both a general overview of the field of digital radiographic imaging and an in-depth treatment of one particular type, the Kinesthetic Charge Detector imaging systems. Topics include the parameterization image quality, physics, and electronics of detection gases.

### **BIOM 7313 - Biomechanics II**

**Credit Hours:** (3) **Description** Modern development of biomechanics at advanced mathematical level; dynamics of the lung, blood flow, microcirculation, and muscle mechanics.

### **BIOM 7408 - Biochemical Engineering**

**Credit Hours:** (3) **Description** Application of engineering principles to effect biochemical transformation through use of living cells, subcellular organelles or enzymes; overview of biotechnology, bioreactor design; cell energetics, enzyme kinetics, Michelis-Menton calculations, immobilized cells; biosensors and process control.

### **BIOM 7430 - Biomaterials**

**Credit Hours:** (3) **Description** Introduction to materials used in biomedical engineering; biocompatibility and uses of implantable materials such as ceramics, polyethylene, metals, composites and other materials.

### **BIOM 7432 - Advanced Biomaterials**

**Credit Hours:** (3) **Description** Materials used in biomedical applications in relationship to corrosion, crack propagation, creep, and related topics; tissue ingrowth into materials.

### **BIOM 7452 - Fluid Mech Biomed Engr**

**Credit Hours:** (3) **Description** Elements of hydrodynamics with applications to flow in biomedical systems; basic principles of continuity and Navier-Stokes equations; ideal and viscous flow, boundary layer solutions, fluid wave behavior; viscosity of plasma, blood, and viscoelastic fluids, principles of viscometry.

### **BIOM 7460 - Cell Adhesion**

**Credit Hours:** (3) **Description** Biophysical and biochemical principles governing cell adhesion; integrin and selectin cell adhesion molecules; interactions between leukocytes and tumore cells with endothelium; measurement and modeling of cell adhesion phenomena.

### **BIOM 7470 - Tissue Engineering**

**Credit Hours:** (3) **Description** Overview of the fundamental principles and current applications of tissue engineering in medicine and health care; topics include bone and cartilage analogs, synthetic skin grafts, cell encapsulation systems, and biohybrid vascular grafts.

### **BIOM 7480 - Expr Tech Cell/Tis Engr**

**Credit Hours:** (3) **Description** Application and techniques of cell culture/tissue engineering including sterile technique and cell/biochemical measurements and instrumentation; topics include sterile technique, light spectroscopy, protein purification and analysis, PCR, chromatography and electrophoresis

### **BIOM 7501 - Medical Imaging**

**Credit Hours:** (3) **Description** Introduction to theory and physics of medical imaging, basic elements of interactions of radiation with matter; analysis of nuclear magnetic resonance and ultrasound imaging techniques.

## BIOM 7502 - Medical Imaging II

**Credit Hours:** (3) **Description** Continuation of 7501-8501. Advanced methods in medical imaging; theory and application of magnetic resonance, ultrasonic, nuclear medicine, and X-ray imaging techniques for biomedical engineers.

## BIOM 7580 - Molecular Imaging

**Credit Hours:** (3)

## BIOM 7721 - Clin/Indust Intern BME

**Credit Hours:** (3) **Description** Independent study for biomedical engineering students; investigation in at least one area selected from a master list and approved by the student's advisor. Grades of A-F, or IP will be given. Grades of A-F, or IP will be given.

## BIOM 7730 - Supervised Research I

**Credit Hours:** (1-12) **Description** Collaborative research with faculty that includes planning, design, execution, analysis, and presentation of research activities related to student's thesis or dissertation work. Unlimited repeatability. Unlimited repeatability Grades of S, U, or IP will be given.

## BIOM 7740 - Supervised Research II

**Credit Hours:** (3) **Description** Collaborative research with faculty that includes planning, design, execution, analysis, and presentation of research activities related to student's Master's thesis. Grades of A-F, or IP will be given.

## BIOM 7760 - Recent Adv & Crit Rev in BME

**Credit Hours:** (1-3) **Description** Discussion of recent advances in biomedical engineering and development of critical reading and writing skills. Oral and written reports required. May be repeated for a maximum of 3 hours. PRE-REQUISITE: Permission of instructor. NOTE: This course cannot be used to fulfill degree requirements. May be repeated for a maximum of 3 hours

## BIOM 7900-7920 - Special Topics in Biomedical Engineering

**Credit Hours:** (1-3) **Description** Topics are varied and announced in online class listings.

## BIOM 7991 - Project I

**Credit Hours:** (1-3) **Description** Independent study in Biomedical Engineering on topic selected in conjunction with instructor. Oral and written reports required. May be used for curricular training as a part of an internship program. Grades of A-F, or IP will be given. Grades of A-F, or IP will be given.

## BIOM 7992 - Project II

**Credit Hours:** (1-3) **Description** Independent investigation of problem selected in consultation with instructor. Oral and written reports required. May be used for curricular training as a part of an internship program. Grades of A-F, or IP will be given. Grades of A-F, or IP will be given.

## BIOM 7996 - Masters Thesis

**Credit Hours:** (1-6) **Description** Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

## BIOM 8004 - Life Sciences Biom I

**Credit Hours:** (3) **Description** This introduction and application to aspects of the entire body provides engineers and physical scientists with an understanding of aspects of the chemical, physical, and mechanical basis of cell shape, function, and motility; integrated treatment of topics in cellular biochemistry, protein synthesis, energy releasing pathways, and membrane biophysics.

## BIOM 8005 - Life Sciences Biom II

**Credit Hours:** (3) **Description** Continuation of 7004-8004. An introduction for engineers and physical scientists to aspects of systemic physiology with an emphasis on and connections to biomedical engineering.

## BIOM 8030 - Stem Cells: Culture/Apppl

**Credit Hours:** (3) Former: (BIOL 7030-8030) **Description** (BIOL 7030-8030) This course contains both theoretical and application based approaches to pluripotent, fetal and adult stem cells. Related topics include stemness, potency, differentiation, regenerative medicine, induced pluripotent stem cells, cancer stem cells, and the ethics of stem cell research. This course will survey modern methods for isolation, culture, and application of stem cells in research and medicine. Three lecture hours per week.

### **BIOM 8101 - Biomed Engr Analysis I**

**Credit Hours:** (3) **Description** Analytical and numerical solution techniques used in analysis of biomedical engineering problems; introduction to modern computational software packages for experience with modern problem-solving methods.

### **BIOM 8103 - Theory Continuous Media**

**Credit Hours:** (3) **Description** Analysis of stress and deformation at a point; derivation of the fundamental equations in tensor notation by application of the basic laws of conservation of mass, energy, and momentum in mechanics and thermodynamics.

### **BIOM 8105 - Physlgl Control Sys**

**Credit Hours:** (3) **Description** Modeling, representation, and analysis of physiological control systems, using control theory techniques; application will be modeling and control problems in cellular and general physiology; introduces basic concepts of control systems (transfer functions, feedback control system using root locus, frequency response methods); discusses various biological systems and their natural and driven control mechanisms.

### **BIOM 8110 - Biostatistics**

**Credit Hours:** (3) **Description** Introduction to statistical techniques used for analysis of basic and clinical biomedical engineering data; sampling theory, hypothesis testing, ANOVA, and nonparametric techniques.

### **BIOM 8114 - Professional Dvlpmnt**

**Credit Hours:** (3) **Description** Weekly presentations of biomedical engineering research by visiting faculty and invited speakers; weekly presentations by graduate students and discussions of graduate student research in journal clubs; required of all full-time graduate students. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

### **BIOM 8116 - Math Model Biol Phenomn**

**Credit Hours:** (3) **Description** Applications of mathematics to the understanding of biological systems in biomedical engineering and modern biology; basic concepts of mathematical modeling development and validation; realistic examples of mathematical models in biology.

### **BIOM 8203 - Bioelectricity**

**Credit Hours:** (3) **Description** Introduction to electrical propagation through human tissue; membrane biophysics, action potentials, subthreshold stimuli, electrophysiology of heart, and neuromuscular junction.

### **BIOM 8209 - Biom Msrmt/Instrmnt**

**Credit Hours:** (3) **Description** Measurement techniques applicable in biomedical engineering; data acquisition system, mechanical instrumentation, interface systems, signal analyses; biocompatibility requirements.

### **BIOM 8222 - Biosensors**

**Credit Hours:** (3) **Description** Provides graduate and upper-level students deeper understanding of chemical sensors and biosensors, with special emphasis on electrochemical biosensors and their in-vivo applications. The lectures and laboratory work will provide the theoretical basis and hands-on experience with macro and micro sensors and their fabrications.

### **BIOM 8301 - Functional Anatomy I**

**Credit Hours:** (1) **Description** Application of engineering principles to functional anatomy and pathological processes of the axial and appendicular skeleton with focus on hip/pelvis, knee, foot and ankle anatomy and applied biomechanics.

### **BIOM 8302 - Functional Anatomy II**

**Credit Hours:** (1) **Description** Application of engineering principles to functional anatomy and pathological processes of the axial and appendicular skeleton with focus on spine, shoulder, elbow, wrist and hand functional anatomy and applied biomechanics.

### **BIOM 8303 - Mvmnt/Jnt/Implnt Mech**

**Credit Hours:** (3) **Description** The course consists of the following sections; muscle and bone anthropometry; kinetics: the link model, mechanical work, energy, and power; kinematics and dynamics of rigid bodies; and the development of mechanically equivalent models of the human musculoskeletal system.

### **BIOM 8305 - Adv Image Instrmntn**

**Credit Hours:** (3) **Description** Presents both a general overview of the field of digital radiographic imaging and an in-depth treatment of one particular type, the Kinestatic Charge Detector imaging systems. Topics include the parameterization image quality, physics, and electronics of detection gases. **PREREQUISITE(S):** BIOM 7501-BIOM 8501 and BIOM 7501-BIOM 8502.

### BIOM 8313 - Biomechanics II

**Credit Hours:** (3) **Description** Modern development of biomechanics at advanced mathematical level; dynamics of the lung, blood flow, microcirculation, and muscle mechanics.

### BIOM 8408 - Biochemical Engineering

**Credit Hours:** (3) **Description** Application of engineering principles to effect biochemical transformation through use of living cells, subcellular organelles or enzymes; overview of biotechnology, bioreactor design; cell energetics, enzyme kinetics, Michelis-Menton calculations, immobilized cells; biosensors and process control.

### BIOM 8430 - Biomaterials

**Credit Hours:** (3) **Description** Introduction to materials used in biomedical engineering; biocompatibility and uses of implantable materials such as ceramics, polyethylene, metals, composites and other materials.

### BIOM 8432 - Advanced Biomaterials

**Credit Hours:** (3) **Description** Materials used in biomedical applications in relationship to corrosion, crack propagation, creep, and related topics; tissue ingrowth into materials.

### BIOM 8452 - Fluid Mech Biomed Engr

**Credit Hours:** (3) **Description** Elements of hydrodynamics with applications to flow in biomedical systems; basic principles of continuity and Navier-Stokes equations; ideal and viscous flow, boundary layer solutions, fluid wave behavior; viscosity of plasma, blood, and viscoelastic fluids, principles of viscometry.

### BIOM 8460 - Cell Adhesion

**Credit Hours:** (3) **Description** Biophysical and biochemical principles governing cell adhesion; integrin and selectin cell adhesion molecules; interactions between leukocytes and

tumore cells with endothelium; measurement and modeling of cell adhesion phenomena.

### BIOM 8470 - Tissue Engineering

**Credit Hours:** (3) **Description** Overview of the fundamental principles and current applications of tissue engineering in medicine and health care; topics include bone and cartilage analogs, synthetic skin grafts, cell encapsulation systems, and biohybrid vascular grafts. **PREREQUISITE(S):** Permission of instructor.

### BIOM 8480 - Expr Tech Cell/Tis Engr

**Credit Hours:** (3) **Description** Application and techniques of cell culture/tissue engineering including sterile technique and cell/biochemical measurements and instrumentation; topics include sterile technique, light spectroscopy, protein purification and analysis, PCR, chromatography and electrophoresis

### BIOM 8501 - Medical Imaging

**Credit Hours:** (3) **Description** Introduction to theory and physics of medical imaging, basic elements of interactions of radiation with matter; analysis of nuclear magnetic resonance and ultrasound imaging techniques.

### BIOM 8502 - Medical Imaging II

**Credit Hours:** (3) **Description** Continuation of 7501-8501. Advanced methods in medical imaging; theory and application of magnetic resonance, ultrasonic, nuclear medicine, and X-ray imaging techniques for biomedical engineers.

### BIOM 8580 - Molecular Imaging

**Credit Hours:** (3)

### BIOM 8710 - Integrity-Conduct of Sci Res

**Credit Hours:** (3) **Description** A study of the ethical principles and related federal and state laws that govern scientific research. Lectures and case studies are used to address topics including research with human subjects, research with animals, the use of human biological materials, privacy and confidentiality of research and medical records, conflicts of interest, scientific misconduct, ownership of research, responsible reporting of research, and ethical training practices.

### **BIOM 8721 - Clin/Indust Intern Bme**

**Credit Hours:** (3) **Description** Independent study for biomedical engineering students; investigation in at least one area selected from a master list and approved by the student's advisor. Grades of A-F, or IP will be given. Grades of S, U, or IP will be given.

### **BIOM 8730 - Supervised Research I**

**Credit Hours:** (1-12) **Description** Collaborative research with faculty that includes planning, design, execution, analysis, and presentation of research activities related to student's thesis or dissertation work. Unlimited repeatability. Unlimited repeatability Grades of S, U, or IP will be given.

### **BIOM 8750 - Supervised Research III**

**Credit Hours:** (3) **Description** Collaborative research with faculty that includes planning, design, execution, analysis, and presentation of research activities related to student's doctoral dissertation. May be repeated for a maximum of 9 hours. May be repeated for a maximum of 9 hours. **PREREQUISITE(S):** Permission of instructor. Grades of A-F, or IP will be given.

### **BIOM 8760 - Recent Adv & Crit Rev in BME**

**Credit Hours:** (1-3) **Description** Discussion of recent advances in biomedical engineering and development of critical reading and writing skills. Oral and written reports required. This course cannot be used to fulfill MS degree requirements. May be repeated for a maximum of 3 hours. **PREREQUISITE(S):** Permission of instructor.

### **BIOM 8900-8920 - Special Topics in Biomedical Engineering**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in online class listings.

### **BIOM 8991 - Project I**

**Credit Hours:** (1-3) **Description** Independent study in Biomedical Engineering on topic selected in conjunction with instructor. Oral and written reports required. May be used for curricular training as a part of an internship program. Grades of A-F, or IP will be given. Grades of S, U, or IP will be given.

### **BIOM 8992 - Project II**

**Credit Hours:** (1-3) **Description** Independent investigation of problem selected in consultation with instructor. Oral and written reports required. May be used for curricular training as a part of an internship program. Grades of A-F, or IP will be given. Grades of S, U, or IP will be given.

### **BIOM 9000 - Dissertation**

**Credit Hours:** (1-12) **Description** Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

## **Business Administration**

### **BA 7501 - Leadership & Negotiation**

**Credit Hours:** 3 **Description** Theoretical and practical consideration of leadership, communication, and negotiation skills in high-performing business organizations. Particular focus developing self-awareness, personal leadership styles, and effective strategies for interpersonal communication and negotiation.

### **BA 7503 - Advanced Business Analytics**

**Credit Hours:** 3 **Description** This graduate level MBA course provides students with an overview of how analytics is used across various business functions. Students will learn and apply the latest techniques in data visualization, descriptive analytics, predictive analysis and data mining in several business domains. Students gain hands on experience with real world data sets and a variety of software tools widely used in industries. **PREREQUISITE(S):** SCMS 7110

### **BA 7505 - International Affairs**

**Credit Hours:** 3 **Description** This course examines the impact of economic, social, cultural, political, legal and environmental influences on business. Topic areas change each semester as determined by new developments in business. **PREREQUISITE(S):** Permission of associate dean for academic programs.

### **BA 7634 - Hlthcare Exec Leadership Skill**

**Credit Hours:** (3) *Cross listing* HADM 7634 **Description** Content focuses on management of healthcare systems and concepts specific to executive leadership in healthcare. The course provides skill building and knowledge expansion in the critical areas of leadership and management development in the context of a rapidly changing and evolving health care environment. The course is specifically designed to develop

understanding of basic healthcare economics and financial concepts, delivery models, personal skills in conflict resolution, operational analysis, employee management, and quality improvement techniques useful for achieving individual and organizational objectives.

**PREREQUISITE(S):** Registration is by permit only.

### **BA 7651 - Health Systems Pharmacy Mgmt**

**Credit Hours:** (3) **Description** Comprehensive analysis of a pharmacy service program critical to successful performance and outcomes in a hospital/healthcare system including 1) leadership and practice management, 2) methods to ensure rational medication therapy, 3) effective medication distribution and control systems, 4) appropriate staff, finances and technology to support operations, 5) facility resources, 6) pharmacy data management, 7) collaboration with other health care professionals and organizations/associations.

### **BA 7703-7717 - Special Topics in Business Administration**

**Credit Hours:** (3) *Cross listing* Special study of problems in business and economics. Topic areas change each semester as determined by new developments in business.

**PREREQUISITE(S):** PREREQUISITE: Permission of associate dean for academic programs.

### **BA 7750 - Surv Internatl Business**

**Credit Hours:** (3) **Description** Overview of global business methods and practices, including management, marketing, financial, and economic complexities in a global business environment; varying emphasis on different functional areas of interest; an introduction and preparation for the International Business Practicum.

### **BA 7800 - Internship In Business**

**Credit Hours:** (1) **Description** Internship in business organization to gain on-the-job experience in actual management environment; project to be approved by College Internship Director and supervised by graduate faculty.

**PREREQUISITE(S):** 15 semester hours of graduate credit and minimum GPA 3.25.

### **BA 7900 - Research Pract/Masters**

**Credit Hours:** (1) **Description** Practical demonstration of and experience in the design, practice, and methodology of research in business. May be repeated for a maximum of 9

hours. May not be used to satisfy degree requirements. May be repeated for a maximum of 9 hours. May not be used to satisfy degree requirements.

### **BA 7902 - Workshop In Business**

**Credit Hours:** (1)

### **BA 7910 - Problems Intl Bus**

**Credit Hours:** (1) **Description** Directed independent or group study and research in international business area. Study projects may be designed by student(s) with approval of supervising faculty member. **PREREQUISITE(S):** Permission of associate dean for academic programs.

### **BA 7920 - Contxt Envrn Intl Bus**

**Credit Hours:** (1) **Description** Accommodates transfer credit (pre-approved by IMBA coordinator) taken abroad; business, language, and area study courses in cultural, economic, historical, philosophical, political, social or legal context. Credit varies according to content; no more than 12 hours may apply toward degree. Restricted to students enrolled in IMBA concentration. Restricted to students enrolled in IMBA concentration.

### **BA 7950 - Business Practicum: Consulting in Organizations**

**Credit Hours:** (3) **Description** Practical "learning by doing" experience in which students learn and integrate the tools and techniques of strategic analysis, formulation and implementation of competitive and corporate strategy by engaging in professional consulting with local organizations. **PREREQUISITE(S):** 12 hours of graduate business courses. Standard Letter

### **BA 7960 - Pharm Exec Innovation Project**

**Credit Hours:** (3) **Description** A longitudinal project based on a practical health-system pharmacy problem currently faced by the student's employer. The student will work under the guidance of full-time faculty members and an external coach (who will be an experienced health-system pharmacy director). A report on the completed project will be presented at the final residential week of the program. The project report will consist of a proposed solution to the problem under investigation.

### **BA 8800 - Reading For Comps**



**Credit Hours:** (1) **Description** Directed readings as preparation for comprehensive examinations. Arranged on an individual basis; limited to Ph.D. students in Business Administration. May be repeated for a maximum of 12 credit hours. May be repeated for a maximum of 12 credit hours.

**PREREQUISITE(S):** Students must have completed or be in the last semester of required course work and have permission of the College Ph.D. coordinator. Grades of S, U, or IP will be given.

### **BA 8900 - Research Pract/Doctoral**

**Credit Hours:** (1) **Description** Practical demonstration of and experience in the design, practice, and methodology of research in business. May be repeated for a maximum of 9 hours. May not be used to satisfy degree requirements. May be repeated for a maximum of 9 hours. May not be used to satisfy degree requirements.

### **BA 8901 - Teaching Practicum**

**Credit Hours:** (1) **Description** Practical demonstration of and experience in the art of teaching business topics. Required course for PhD students. May be repeated for a maximum of 9 credit hours. May not be used to satisfy any degree requirements. May be repeated for a maximum of 9 credit hours. May not be used to satisfy any degree requirements.

### **BA 8902 - Workshop In Business**

**Credit Hours:** (1)

### **BA 8920 - Dissertation Seminar**

**Credit Hours:** (1) **Description** Research design and methodology in administrative sciences; guidance in preparing dissertation proposal; students present progress reports to other seminar members to critique the progress of fellow students and acquire skills and knowledge in research design and methodologies. To be taken during the last 12 hours of doctoral coursework.

### **BA 9000 - Dissertation**

**Credit Hours:** (6 to 18) **Description** Required Doctoral Dissertation credit hours changed from "18 semester hours" to "minimum of 6 but not more than 18 semester hours." Reason for change is to align BA 9000 credits with the flexibility requirements, recently passed at the UCGS (University Council for Graduate Studies). **PREREQUISITE(S):** Successful completion of comprehensive exam or permission

of the Vice Provost for Graduate Programs. Grades of S, U, or IP will be given.

## **Business Education**

### **BUED 7655 - Mat & Meth In Voc Educ**

**Credit Hours:** (3) **Description** Instructional media and aids relating to vocational office education with emphasis on recent developments and research; particular emphasis on individual instruction techniques for the block-time approach to office education programs.

## **Business Information and Technology**

### **MIS 6000-6009 - Topics in Teaching Methods in Information Technology**

**Credit Hours:** (3) **Description** Selected topics of current interest in management information systems and computer software applications. Designed for teacher certification requirements. Topics are varied and announced in online class listings **PREREQUISITE(S):** Permission of instructor.

### **MIS 6160 - Mobile Application Development**

**Credit Hours:** (3) **Description** Intermediate level business application program development using languages and techniques widely employed in business environment. **PREREQUISITE(S):** MIS 2845 or equivalent.

### **MIS 6672 - Project Mgmt Tools/Lead**

**Credit Hours:** (3) **Description** Computer-based project management tools and project management leadership roles and techniques.

### **MIS 6681 - Fundamental/Software Testing**

**Credit Hours:** (3) **Description** Software testing objectives, planning, techniques, and organizational options. Manual and automated software testing techniques and test case generation methodologies.

### **MIS 6682 - Advanced Software Testing**

**Credit Hours:** (3) **Description** Topics include advanced software testing methods, the roles of software testers and users at all stages of software development, walkthroughs,

inspections, and reviews, testing in standard versus agile developments environments. **PREREQUISITE(S):** MIS 6681.

### **MIS 7030 - Integ Software Appl**

**Credit Hours:** (3) **Description** Emphasizes mastery of suite application software using an integrated approach to software applications and employing problem-based methods; course meets licensure standards.

### **MIS 7060 - Program Devel & File Str**

**Credit Hours:** (3) **Description** Programming principles, program logic development, internal data structures, and file organization; development of structures and computer programs using a modern programming language.

### **MIS 7070 - Intro to MIS in Business**

**Credit Hours:** (3) **Description** Provides essential business core content needed for IS/IT management; examines effective methods of hiring and maintaining qualified IS/IT employees, using accounting and financial information effectively for IS/IT strategic decisions and leadership.

### **MIS 7160 - Mobile Application Development**

**Credit Hours:** (3) **Description** Introduction to the technology of computing; processor operation including fetch/execute, input/output, instruction types, interrupt handling, addressing schemes and multiprocessing; business systems software including operating systems from single-user single-task to multi-user multitask; major current operating systems.

### **MIS 7170 - Global Info Tech Mgmt**

**Credit Hours:** (3) **Description** Information technology's impact on globalization of businesses; international IT environment; models and issues in international IS; planning and managing global systems; case studies and applications. **PREREQUISITE(S):** Permission of instructor.

### **MIS 7190 - Programing For Business**

**Credit Hours:** (3) **Description** Fundamentals of programming for business projects, including Internet-based business applications and object-oriented programming languages. **PREREQUISITE(S):** permission of instructor.

### **MIS 7435 - Web Site Devel**

**Credit Hours:** (3) **Description** Focuses on Internet, intranets, and other online technologies to develop and maintain the enterprise web site in a business environment; web mastering techniques include coverage of web site creation, design, programming, planning, enhancement, and maintenance.

### **MIS 7455 - Cyber Ethics in IT**

**Credit Hours:** (3) **Description** Business ethics and computer ethics issues and concepts in an online environment, including relevant topics such as privacy, freedom of expression, intellectual property, software development and testing, and related IT management decisions. **PREREQUISITE(S):** 9 hours of graduate credit or permission of instructor.

### **MIS 7470-7479 - Topics in Information Systems**

**Credit Hours:** (3)

### **MIS 7480 - Thriving In Info Age**

**Credit Hours:** (3) **Description** Introduction to information and technology challenges facing today's organization, including developing technology-enabled strategies and designing organizational systems and structures that facilitate development and execution of these strategies.

### **MIS 7605 - Bus Database Systems \*\***

**Credit Hours:** (3) **Description** Management of database for effective support of management information systems. Topics include characteristics and design of schemas and subschemas for hierarchical, network, and relational data models.

### **MIS 7610 - Sys Analysis & Design \*\***

**Credit Hours:** (3) **Description** Comprehensive structured approach to application system development process; emphasis on requirements analysis, logical specifications, structured design, and implementation of information systems.

### **MIS 7615 - Enterprise Network & Security**

**Credit Hours:** (3) **Description** Introduction to concepts and terminology of data communication, network design, and distributed information systems; topics include equipment protocols and architectures, transmission alternatives, the

communications environment, regulatory issues, and network pricing and management.

### **MIS 7620 - Business Machine Learning I \*\***

**Credit Hours:** (3) **Description** Business Intelligence is the study of computerized support for management decision making. Topics include data mining, artificial neural networks, text and web mining, data warehousing, expert systems, and knowledge management.

### **MIS 7621 - Business Machine Learning II**

**Credit Hours:** (3) **Description** This advanced course in business analytics goes into depth in techniques and methods applied to real world problems and data. Techniques covered include: artificial neural networks, decision trees, nearest neighbor approaches, predictive modeling, and genetic algorithms. The emphasis will be on application in business. The course will provide guidance on building the business case and the model including problem definition and data evaluation, and evaluation of the model. Hands-on exercises will be required using analytics packages/languages as Tableau, Rapid Miner, IBM Modeler, Microsoft SQL, R. **PREREQUISITE(S)** or **COREQUISITE(S)**: MIS 7620 or instructor permission.

### **MIS 7630 - Information Systems Proj**

**Credit Hours:** (3) **Description** Development or evaluation or both of specialized software product; field studies to collect and analyze data pertinent to significant information systems issues. **PREREQUISITE(S)**: MIS 7610. Grades of A-F, or IP will be given.

### **MIS 7640 - Information Systems Mgmt/Plan**

**Credit Hours:** (3) **Description** Information systems planning and management for the corporate executive and information systems manager; emphasis on information as a critical resource and its role in policy and long-range planning. **PREREQUISITE(S)**: MIS 7605. **COREQUISITE(S)**: MIS 7610.

### **MIS 7650 - Information Systems Global Enterprise \*\***

**Credit Hours:** (3) **Description** Information systems and their roles and applications in global enterprises, including conceptual foundations, business applications, impacts on organizational behavior, and how IT may be used to implement global strategies to gain competitive advantage.

### **MIS 7655 - Advanced Systems Analysis**

**Credit Hours:** (3) **Description** Advanced concepts in information systems planning and development with focus on current information technologies and systems development practices that lead to timely delivery of effective information systems solutions; special attention on communication and interpersonal skills required for today's systems development activities. **PREREQUISITE(S)**: MIS 7610.

### **MIS 7660 - Advanced Data Management**

**Credit Hours:** (3) **Description** Advanced concepts in data management and in the strategic use of data. Topics will be selected from data strategy, business intelligence, data mining and the strategic use of data warehouses, data quality, the business value of data, unstructured data, modern data administration, master data management, data management in cloud computing, data issues in agile development, and other contemporary data topics.

### **MIS 7665 - Advanced Business Compt Envrn**

**Credit Hours:** (3) **Description** Technical aspects and managerial implications of several state-of-the-art technologies with potential effects on competitive advantage, probability and cost, and personnel resources. **PREREQUISITE(S)**: MIS 7605, MIS 7610, and MIS 7615; or permission of the instructor.

### **MIS 7670 - Information Security Mgmt**

**Credit Hours:** (3) **Description** Comprehensive survey of technical and managerial aspects of computer and network security in the business environment. Emphasis is on managerial issues and decisions related to selecting and managing all aspects of information security.

### **MIS 7671 - Project/Change Mgmt \*\***

**Credit Hours:** (3) **Description** Overview of theoretical and practical concepts in management of IT projects; explores unique and particular challenges resulting from rapid technological change and dynamic business environments; difficulty of managing changes in organizations resulting from introducing or revising information systems, emphasizing change management role of the IS specialist. **PREREQUISITE** or **COREQUISITE**: MIS 7610 or equivalent **PREREQUISITE(S)** or **COREQUISITE(S)**: PSYC 7610 or equivalent

## MIS 7700 - Fundamentals of Data Analytics

**Credit Hours:** (3) **Description** Descriptive Statistics; correlation; regression; data pre-processing and visualization; probability including conditional probability and Bayesian theorems, Probability Distributions - PDF, CDF (both discrete and continuous), Hypothesis testing, Kernel Functions, Estimations - Least Squares and Confidence Intervals

## MIS 7710 - Web Analytics

**Credit Hours:** (3) **Description** Engagement metrics for Facebook, twitter, LinkedIn, blogs, etc. web analytics, SEO, online advertising and digital experimentation (A/B testing) effectiveness measurement; social media and email outreach measurement.

## MIS 7720 - Bus. Artificial Intelligence

**Credit Hours:** (3) **Description** Paradigms of artificial intelligence, machine learning, intelligent agents, using AI (statistics, uncertainty, and Bayes networks; machine learning, logic and planning), Intelligence: Learning and prediction, Applications: machine learning (ML), image processing, natural language processing (NLP), robotics, etc. will discuss AI business use cases, Personalization (targeted ads) and recommendations, fraud detection, smart cars, chat bots, future of AI, and how AI will impact jobs and companies.

## MIS 7910 - Prob Mgmt Info Syst

**Credit Hours:** (1-6) **Description** Directed independent research projects in an area selected by the student with approval of supervising faculty member and Faculty Director. Proposed plan of study must be approved prior to enrollment. Grades of A-F, or IP will be given. Grades of A-F, or IP will be given.

## MIS 7996 - Thesis

**Credit Hours:** (3-6) **Description** Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

## MIS 8465 - Inform Sys In Organiztns

**Credit Hours:** (3) **Description** Information systems and their roles and applications in organizations, including conceptual foundations, underlying technologies, business applications, impacts on organizational behavior, and how IT may be used to implement organizational strategy and gain competitive advantage.

## MIS 8470-8479 - Topics in Information Systems

**Credit Hours:** (1-3)

## MIS 8605 - Bus Database Systems

**Credit Hours:** (3) **Description** Management of database for effective support of management information systems. Topics include characteristics and design of schemas and subschemas for hierarchical, network, and relational data models.

## MIS 8610 - Sys Analysis & Design

**Credit Hours:** (3) **Description** Comprehensive structured approach to application system development process; emphasis on requirements analysis, logical specifications, structured design, and implementation of information systems.

## MIS 8615 - Enterprise Network and Security

**Credit Hours:** (3) **Description** Introduction to concepts and terminology of data communication, network design, and distributed information systems; topics include equipment protocols and architectures, transmission alternatives, the communications environment, regulatory issues, and network pricing and management.

## MIS 8620 - Business Intelligence

**Credit Hours:** (3) **Description** Business Intelligence is the study of computerized support for management decision making. Topics include data mining, artificial neural networks, text and web mining, data warehousing, expert systems, and knowledge management.

## MIS 8621 - Data Analytics for Business

**Credit Hours:** (3) **Description** This advanced course in business analytics goes into depth in techniques and methods applied to real world problems and data. Techniques covered include: artificial neural networks, decision trees, nearest neighbor approaches, predictive modeling, and genetic algorithms. The emphasis will be on application in business. The course will provide guidance on building the business case and the model including problem definition and data evaluation, and evaluation of the model. Hands-on exercises will be required using analytics packages/languages as Tableau, Rapid Miner, IBM Modeler, Microsoft SQL, R. **PREREQUISITE(S)** or **COREQUISITE(S)**: MIS 7620 or instructor permission.

### **MIS 8640 - Inform Sys Mgmt/Plan**

**Credit Hours:** (3) **Description** Information systems planning and management for the corporate executive and information systems manager; emphasis on information as a critical resource and its role in policy and long-range planning.

**PREREQUISITE(S):** MIS 7605. **COREQUISITE(S):** MIS 7610.

### **MIS 8650 - Global Informatn Techn**

**Credit Hours:** (3) **Description** Information technology's impact on globalizations of businesses; international IT environment; models and issues in international IS; planning and managing global systems; case studies and applications.

**PREREQUISITE(S):** MIS 7465 or permission of instructor.

### **MIS 8655 - Adv Systems Analysis**

**Credit Hours:** (3) **Description** Advanced concepts in information systems planning and development with focus on current information technologies and systems development practices that lead to timely delivery of effective information systems solutions; special attention on communication and interpersonal skills required for today's systems development activities. **PREREQUISITE(S):** MIS 7610.

### **MIS 8660 - Advanced Data Management**

**Credit Hours:** (3) **Description** Advanced concepts in data management and in the strategic use of data. Topics will be selected from data strategy, business intelligence, data mining and the strategic use of data warehouses, data quality, the business value of data, unstructured data, modern data administration, master data management, data management in cloud computing, data issues in agile development, and other contemporary data topics.

### **MIS 8665 - Adv Business Compt Envn**

**Credit Hours:** (3) **Description** Technical aspects and managerial implications of several state-of-the-art technologies with potential effects on competitive advantage, probability and cost, and personnel resources.

**PREREQUISITE(S):** MIS 7605, MIS 7610, and MIS 7615; or permission of the instructor.

### **MIS 8670 - Information Security Management**

**Credit Hours:** (3) **Description** Comprehensive survey of technical and managerial aspects of computer and network security in the business environment. Emphasis is on managerial issues and decisions related to selecting and managing all aspects of information security.

### **MIS 8710 - Sem/Inform Systems I**

**Credit Hours:** (3) **Description** Scientific methodology of MIS research; MIS frameworks and theory of MIS; organization-critique and analyze foundational papers; in-depth study of researchable topics. **PREREQUISITE(S):** Permission of instructor.

### **MIS 8720 - Sem/Inform Systems II**

**Credit Hours:** (3) **Description** Development of a research proposal; critique and evaluation related to research and the proposal. **PREREQUISITE(S):** MIS 8710 or permission of instructor.

### **MIS 8730 - Theory Building**

**Credit Hours:** (3) **Description** Theory building is an important topic for both conceptual and empirical research in business research. This course takes a cross disciplinary approach focusing on how to analyze, construct, and use theory in research. Theories from information systems, marketing, and management are reviewed and best practices in theory building across business disciplines are introduced and applied.

### **MIS 8800 - Experimental Research Methods**

**Credit Hours:** (3) **Description** This seminar provides in-depth coverage of experimental design research issues and methods in business research. At the completion of the seminar, students should have in-depth knowledge on how to frame questions and hypotheses that are testable using experimental designs, how to frame an experimental study, how to acquire data, conduct the experiment, perform analyses with popular statistical software, and how to write-up research results from an experiment. Course includes weekly lecture and hands-on laboratory sessions. **PREREQUISITE(S):** permission of instructor.

### **MIS 8910 - Prob Mgmt Info Syst**

**Credit Hours:** (1-6) **Description** Directed independent research projects in an area selected by the student with

approval of supervising faculty member and Faculty Director. Proposed plan of study must be approved prior to enrollment. Grades of A-F, or IP will be given. Grades of A-F, or IP will be given.

## Center for Earthquake Research and Information

### CERI 7020-7029 - Special Topics in Geophysics

**Credit Hours:** (3) Former: (ESCI 7020-29-8020-29)

### CERI 7102 - Programming Tools

**Credit Hours:** (3) *Cross listing* (Same as CIVL 7002/CIVL 8002) **Description** (Same as CIVL7002/8002) An introduction to applied programming and programming tools for scientists and engineers at a graduate level with limited background on computer programming. Three lecture hours per week. Three lecture hours per week. **PREREQUISITE(S):** Permission of the instructor.

### CERI 7104 - Data Analysis in Geophysics

**Credit Hours:** (3) Former: (ESCI 7205) *Cross listing* (same as CIVL 7126) **Description** Through project-based work, students will develop programming skills using high-level software tools commonly used in geophysics research, including the Unix environment, Python, MATLAB, Seismic Analysis Code, AWK, Shell Scripts, and Generic Mapping Tools. **PREREQUISITE(S):** Permission of instructor.

### CERI 7105 - Global Seismology

**Credit Hours:** (3) Former: (ESCI 7401) **Description** (ESCI 7401). Provides foundation for advanced graduate research, including fundamentals of continuum mechanics, vector calculus, and solutions of the vector wave equation in homogeneous and inhomogeneous media; understanding of current theories of earthquake occurrence and wave propagation within the earth. **PREREQUISITE(S):** Differential equations.

### CERI 7106 - Signal Processing Earth Sci

**Credit Hours:** (3) Former: (GEOP 7602; GEOL 7358; ESCI 7602; CIVL 7127) **Description** (GEOP 7602; GEOL 7358; ESCI 7602; CIVL 7127). Fundamentals of digital processing of geophysical data, both purely mathematical and applied

aspects with attention to digital seismograms and gravity and magnetic data. **PREREQUISITE(S):** MATH 1920 or equivalent.

### CERI 7124 - Earthquake Ground Motion Simul

**Credit Hours:** (3) *Cross listing* (Same as CIVL 7125-CIVL 8125) **Description** (Same as CIVL 7125-8125). Contemporary methods in earthquake ground motion simulation, applications in seismic hazard analysis and engineering, state-of-the-art simulation software. Three lecture hours per week. Three lecture hours per week. **PREREQUISITE(S):** Permission of the instructor.

### CERI 7130 - Engineering Analysis

**Credit Hours:** (3) *Cross listing* (same as CIVL 7001/CIVL 8001) **Description** (same as CIVL 7001/8001) Numerical integration of linear and non-linear differential equations; finite difference methods; systems of linear algebraic equations; applications to engineering problems. **PREREQUISITE(S):** Permission of instructor.

### CERI 7204 - Prob Earthquake Hazard Anal

**Credit Hours:** (3) *Cross listing* (Same as CIVL 7136; same as ESCI 7204) **Description** (Same as CIVL 7136; same as ESCI 7204) Fundamentals of basic probability, seismicity analysis, ground motion attenuation and site effects, seismic hazard analysis, and uncertainty analysis; students will perform a probabilistic seismic hazard analysis for a region of their interest. **PREREQUISITE(S):** Permission of instructor.

### CERI 7211 - Intro Global Geophysics

**Credit Hours:** (3) **Description** Overview of the important physical characteristics of the solid earth; gravity and the figure of the earth, age of the earth and geochronology, magnetic field and paleomagnetism, plate tectonics, heat energy of the earth, and the internal structure of the earth. **PREREQUISITE(S):** permission of the instructor.

### CERI 7214 - Near Surface Geophysics

**Credit Hours:** (3) **Description** Application of various geophysical methods to investigate the physical properties of material in the near surface. Students will become familiar with common geophysical field techniques (seismic, gravity, electric, magnetic, etc.) in terms of basic theory, data

collection and analysis, and interpretation. Laboratory will involve data collection in the surrounding region.

### **CERI 7230 - Exploration Seismology**

**Credit Hours:** (4) Former: (ESCI 7404) *Cross listing* (ESCI 7230-ESCI 8230) **Description** Examines the reflective seismic approach to mineral exploration, and environmental and tectonic imaging; covers seismic data processing, data visualization, and acquisition procedures, including field equipment; hands-on experience analyzing seismic reflection records. Three lecture, two laboratory hours per week. **PREREQUISITE(S):** Permission of instructor.

### **CERI 7240 - Earthquake Surface Processes**

**Credit Hours:** (3) *Cross listing* (Same as ESCI 7240/ESCI 8240) **Description** (Same as ESCI 7240/8240) Overview of the surface and near-surface geological conditions that are associated with earthquake occurrence. Evidence for past large earthquakes as written in the geological record. Hands-on experience will be obtained through field work.

### **CERI 7244 - Regional Geop Synthesis**

**Credit Hours:** (3) Former: (GEOP 7112; ESCI 7112) **Description** (GEOP 7112; ESCI 7112). Theoretical and practical aspects of geophysics applied to determining earth structure and investigating tectonic processes at a regional scale; major topics include gravity, magnetism, heat flow, geoelectric, and seismic methods, and their implications for lithospheric structure and deformational processes. **PREREQUISITE(S):** permission of instructor.

### **CERI 7260 - Inverse Methods in Geophysics**

**Credit Hours:** (3) Former: (GEOP 7603; ESCI 7603; CIVL 7128) **Description** (GEOP 7603; ESCI 7603; CIVL 7128). Methods for parameter estimation in earth sciences, including review of linear algebra and vector spaces, introduction to probability and statistics, and solution of inverse linear and nonlinear problems; students will solve an inverse problem in their field of interest. **PREREQUISITE(S):** Linear Algebra (MATH 3242 or equivalent) or permission of instructor.

### **CERI 7270 - Earthquake Source Physics**

**Credit Hours:** (3) **Description** Develops the tools for quantitative study of earthquakes and faulting. Covers kinematic moment tensor and finite fault representations of

earthquakes, elastodynamics including common models for friction and fracture, and earthquake ground motions in the near source region. **PREREQUISITE(S):** partial differential equations and a basic background in numerical methods.

### **CERI 7275 - Crustal Dynamics**

**Credit Hours:** 3 **Description** Mechanisms of brittle deformation processes from rock fracture to earthquakes. Topics covered range from fracture mechanics and friction to mechanics of faulting, the seismic cycle and fluid flow processes. **PREREQUISITE(S):** Permission of the instructor Standard Letter

### **CERI 7280 - Seismotectonics**

**Credit Hours:** (3) **Description** Synthesis of earthquake, geophysical, geodetic and geological data to deduce the tectonic framework of active plate boundaries and intraplate seismic zones. **PREREQUISITE(S):** Permission of the instructor.

### **CERI 7315 - Comp Methods in Geodynamics**

**Credit Hours:** (3) Former: (GEOL 7315-8315; ESCI 7315-8315) **Description** Theoretical and practical understanding of numerical methods for geodynamic simulations. Covers numerical techniques necessary for proper understanding of finite element method and also provides hands-on experience with publicly available geodynamic modeling codes, visualization tools and high performance computing resources. **PREREQUISITE(S):** Basic programming skills and undergrad level knowledge on partial differential equations.

### **CERI 7330 - Geodynamics Applications**

**Credit Hours:** 3 **Description** Focuses on applications of the finite element method in modelling of earthquake related processes (e.g. coseismic deformation) and the numerical representation of the corresponding tectonic environments (e.g. subduction zones). Uses advanced finite element meshing tools and open source finite element codes. **PREREQUISITE(S):** Permission of the instructor Standard Letter

### **CERI 7353 - Geodynamics**

**Credit Hours:** (3) *Cross listing* (Same as ESCI 7353) **Description** (Same as ESCI 7353) Physical principles

necessary for understanding plate tectonics and geological phenomena; major topics include stress and strain in earth's crust, bending of lithosphere, heat conduction in lithosphere, and mantle convection, solidification of magmas, mechanical behavior of faults, and subsidence of sedimentary basins.

**PREREQUISITE(S):** Permission of instructor.

### **CERI 7355 - Appls Space-Base Geodesy**

**Credit Hours:** (3) Former: (GEOP 7355; ESCI 7355)

**Description** (GEOP 7355; ESCI 7355) Emphasizes detecting, quantifying, and modeling changes in the geoid and earth's shape associated with geodynamic processes such as the seismic cycle and earth's response to loading; concentrates on techniques such as VLBI, SLR, and INSAR. The relationship to traditional geodesy and application of GPS data to earth and space weather are also developed.

### **CERI 7375 - Method/Math Physics I**

**Credit Hours:** (3) Former: (GEOP 7376; ESCI 7375) *Cross listing* (Same as MATH 7375) **Description** (GEOP 7376;

ESCI 7375; same as MATH 7375). Vector space, matrices, tensors, vector fields, function spaces, differential and integral operators, transform theory, partial differential equations.

**PREREQUISITE(S):** MATH 3120, 4242 and 4350 or permission of the instructor.

### **CERI 7376 - Method/Math Physics II**

**Credit Hours:** (3) Former: (GEOP 7376; ESCI 7376) *Cross listing* (Same as MATH 7376, MATH 7376) **Description** (GEOP 7376; ESCI 7376; same as MATH 7376, PHYS 7376).

Complex variables, asymptotic expansions, special functions, calculus of variations, additional topics on matrices and operators, topics in non-linear analysis. **PREREQUISITE(S):** MATH 7375.

### **CERI 7402 - Intermediate Seismology**

**Credit Hours:** (3) Former: (GEOP 7402; ESCI 7402)

**Description** (GEOP 7402; ESCI 7402). Provides foundation in seismic wave propagation based on thorough understanding of point source radiation, plane wave theory, optic ray theory, and point sources in plane-layered media.

**PREREQUISITE(S):** A course in partial differential equations.

### **CERI 7403 - Advanced Topics in Geophysics**

**Credit Hours:** (3) Former: (GEOP 7403; ESCI 7403-8403)

**Description** (GEOP 7403; ESCI 7403-8403). Topics may include aspects of theoretical seismology, rock rheology and convection, faulting mechanics, advanced potential field techniques, or advanced field methods. **PREREQUISITE(S):** Permission of Instructor.

### **CERI 7405 - Struct Interp Seism Reflec Dat**

**Credit Hours:** (3) Former: (ESCI 7405-8405) **Description**

(ESCI 7405-8405) Practical application of reflection seismic method used in tectonic analysis of deformed belts and sedimentary basins, including case studies from around the world that emphasize integration of seismic reflection data with other surface and subsurface geological/ geophysical information, as well as use of restorable structural sections; basics of seismic processing are introduced in the framework of interpretation problems. **PREREQUISITE(S):** Permission of instructor.

### **CERI 7621 - Independent Study**

**Credit Hours:** (1-3) **Description** Independent investigation of a research problem selected in consultation with the instructor. May be repeated for a maximum of 6 credit hours. Grades of S/U or IP will be given. May be repeated for a maximum of 6 credit hours Grades of S/U or IP will be given.

### **CERI 7701 - Seminar in Geophysics**

**Credit Hours:** (3) Former: (GEOL 7641, GEOP 7701, ESCI 7701). **Description** (GEOL 7641, GEOP 7701, ESCI 7701).

### **CERI 7702 - Seminar in Seismology**

**Credit Hours:** (3) Former: (GEOP 7702-8702; ESCI 7702-8702). **Description** (GEOP 7702-8702; ESCI 7702-8702).

### **CERI 7703 - Seminar Earthquake Sys. Sci.**

**Credit Hours:** (3) **Description** Mechanics of fluid migration through the upper crust in the context of geothermal activity, volcanoes, faults and earthquakes. Covers porous media, Darcy flow, poroelastic effects, earthquake friction, stress distributions, volcano deformation, fault formation and evolution. **PREREQUISITE(S):** permission of the instructor. Standard Letter

### **CERI 7996 - Thesis**



**Credit Hours:** (1-6) **Description** Student must research, write, and defend a thesis on a topic approved by major professor and advisory committee. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

### **CERI 8020-8029 - Special Topics in Geophysics**

**Credit Hours:** (3) Former: (ESCI 7020-29-8020-29)

### **CERI 8102 - Programming Tools**

**Credit Hours:** (3) *Cross listing* (Same as CIVL 7002/CIVL 8002) **Description** (Same as CIVL7002/8002) An introduction to applied programming and programming tools for scientists and engineers at a graduate level with limited background on computer programming. Three lecture hours per week. Three lecture hours per week. **PREREQUISITE(S):** Permission of the instructor.

### **CERI 8104 - Data Analysis in Geophysics**

**Credit Hours:** (3) Former: (ESCI 7205) *Cross listing* (same as CIVL 8126) **Description** Through project-based work, students will develop programming skills using high-level software tools commonly used in geophysics research, including the Unix environment, Python, MATLAB, Seismic Analysis Code, AWK, Shell Scripts, and Generic Mapping Tools. **PREREQUISITE(S):** Permission of instructor.

### **CERI 8105 - Global Seismology**

**Credit Hours:** (3) Former: (ESCI 7401) **Description** (ESCI 7401). Provides foundation for advanced graduate research, including fundamentals of continuum mechanics, vector calculus, and solutions of the vector wave equation in homogeneous and inhomogeneous media; understanding of current theories of earthquake occurrence and wave propagation within the earth. **PREREQUISITE(S):** Differential equations.

### **CERI 8106 - Signal Processing Earth Sci**

**Credit Hours:** (3) Former: (GEOP 7602; GEOL 7358; ESCI 7602; CIVL 8127) **Description** (GEOP 7602; GEOL 7358; ESCI 7602; CIVL 8127). Fundamentals of digital processing of geophysical data, both purely mathematical and applied aspects with attention to digital seismograms and gravity and magnetic data. **PREREQUISITE(S):** MATH 1920 or equivalent.

### **CERI 8124 - Earthquake Ground Motion Simul**

**Credit Hours:** (3) *Cross listing* (Same as CIVL 7125-CIVL 8125) **Description** (Same as CIVL 7125-8125). Contemporary methods in earthquake ground motion simulation, applications in seismic hazard analysis and engineering, state-of-the-art simulation software. Three lecture hours per week. **PREREQUISITE(S):** Permission of the instructor.

### **CERI 8130 - Engineering Analysis**

**Credit Hours:** (3) *Cross listing* (Same as CIVL 7001/CIVL 8001) **Description** (same as CIVL 7001/8001) Numerical integration of linear and non-linear differential equations; finite difference methods; systems of linear algebraic equations; applications to engineering problems. **PREREQUISITE(S):** Permission of instructor.

### **CERI 8204 - Prob Earthquake Hazard Anal**

**Credit Hours:** (3) *Cross listing* (Same as CIVL 7136; same as ESCI 7204) **Description** (Same as CIVL 7136; same as ESCI 7204) Fundamentals of basic probability, seismicity analysis, ground motion attenuation and site effects, seismic hazard analysis, and uncertainty analysis; students will perform a probabilistic seismic hazard analysis for a region of their interest. **PREREQUISITE(S):** Permission of instructor.

### **CERI 8211 - Intro Global Geophysics**

**Credit Hours:** (3) **Description** Overview of the important physical characteristics of the solid earth; gravity and the figure of the earth, age of the earth and geochronology, magnetic field and paleomagnetism, plate tectonics, heat energy of the earth, and the internal structure of the earth. **PREREQUISITE(S):** permission of the instructor.

### **CERI 8214 - Near Surface Geophysics**

**Credit Hours:** (3) **Description** Application of various geophysical methods to investigate the physical properties of material in the near surface. Students will become familiar with common geophysical field techniques (seismic, gravity, electric, magnetic, etc.) in terms of basic theory, data collection and analysis, and interpretation. Laboratory will involve data collection in the surrounding region.

### **CERI 8230 - Exploration Seismology**

**Credit Hours:** (4) Former: (ESCI 7404) **Description** Examines the reflective seismic approach to mineral exploration, and environmental and tectonic imaging; covers seismic data processing, data visualization, and acquisition procedures, including field equipment; hands-on experience analyzing seismic reflection records. Three lecture, two laboratory hours per week. **PREREQUISITE(S):** Permission of instructor.

### **CERI 8240 - Earthquake Surface Processes**

**Credit Hours:** (3) *Cross listing* (Same as ESCI 7240/ESCI 8240) **Description** (Same as ESCI 7240/8240) Overview of the surface and near-surface geological conditions that are associated with earthquake occurrence. Evidence for past large earthquakes as written in the geological record. Hands-on experience will be obtained through field work. **PREREQUISITE(S):** Permission of the instructor.

### **CERI 8244 - Regional Geop Synthesis**

**Credit Hours:** (3) Former: (GEOP 7112; ESCI 7112) **Description** (GEOP 7112; ESCI 7112). Theoretical and practical aspects of geophysics applied to determining earth structure and investigating tectonic processes at a regional scale; major topics include gravity, magnetism, heat flow, geoelectric, and seismic methods, and their implications for lithospheric structure and deformational processes. **PREREQUISITE(S):** permission of instructor.

### **CERI 8260 - Inverse Methods in Geophysics**

**Credit Hours:** (3) Former: (GEOP 7603; ESCI 7603; CIVL 8128) **Description** (GEOP 7603; ESCI 7603; CIVL 8128). Methods for parameter estimation in earth sciences, including review of linear algebra and vector spaces, introduction to probability and statistics, and solution of inverse linear and nonlinear problems; students will solve an inverse problem in their field of interest. **PREREQUISITE(S):** Linear Algebra (MATH 3242 or equivalent) or permission of instructor.

### **CERI 8270 - Earthquake Source Physics**

**Credit Hours:** (3) **Description** Develops the tools for quantitative study of earthquakes and faulting. Covers kinematic moment tensor and finite fault representations of earthquakes, elastodynamics including common models for friction and fracture, and earthquake ground motions in the near source region. **PREREQUISITE(S):** partial differential equations and a basic background in numerical methods.

### **CERI 8275 - Crustal Dynamics**

**Credit Hours:** 3 **Description** Mechanisms of brittle deformation processes from rock fracture to earthquakes. Topics covered range from fracture mechanics and friction to mechanics of faulting, the seismic cycle and fluid flow processes. Standard Letter

### **CERI 8280 - Seismotectonics**

**Credit Hours:** (3) **Description** Synthesis of earthquake, geophysical, geodetic and geological data to deduce the tectonic framework of active plate boundaries and intraplate seismic zones. **PREREQUISITE(S):** Permission of the instructor.

### **CERI 8315 - Comp Methods in Geodynamics**

**Credit Hours:** (3) Former: (GEO 7315-8315; ESCI 7315-8315) **Description** Theoretical and practical understanding of numerical methods for geodynamic simulations. Covers numerical techniques necessary for proper understanding of finite element method and also provides hands-on experience with publicly available geodynamic modeling codes, visualization tools and high performance computing resources. **PREREQUISITE(S):** Basic programming skills and undergrad level knowledge on partial differential equations..

### **CERI 8330 - Geodynamics Applications**

**Credit Hours:** 3 **Description** Focuses on applications of the finite element method in modelling of earthquake related processes (e.g. coseismic deformation) and the numerical representation of the corresponding tectonic environments (e.g. subduction zones). Uses advanced finite element meshing tools and open source finite element codes. **PREREQUISITE(S):** Permission of the instructor Standard Letter

### **CERI 8353 - Geodynamics**

**Credit Hours:** (3) *Cross listing* (Same as ESCI 7353) **Description** (Same as ESCI 7353) Physical principles necessary for understanding plate tectonics and geological phenomena; major topics include stress and strain in earth's crust, bending of lithosphere, heat conduction in lithosphere, and mantle convection, solidification of magmas, mechanical behavior of faults, and subsidence of sedimentary basins. **PREREQUISITE(S):** Permission of instructor.

### **CERI 8355 - Appls Space-Base Geodesy**

**Credit Hours:** (3) Former: (GEOP 7355; ESCI 7355)

**Description** (GEOP 7355; ESCI 7355) Emphasizes detecting, quantifying, and modeling changes in the geoid and earth's shape associated with geodynamic processes such as the seismic cycle and earth's response to loading; concentrates on techniques such as VLBI, SLR, and INSAR. The relationship to traditional geodesy and application of GPS data to earth and space weather are also developed.

### **CERI 8402 - Intermediate Seismology**

**Credit Hours:** (3) Former: (GEOP 7402; ESCI 7402)

**Description** (GEOP 7402; ESCI 7402). Provides foundation in seismic wave propagation based on thorough understanding of point source radiation, plane wave theory, optic ray theory, and point sources in plane-layered media.

**PREREQUISITE(S):** A course in partial differential equations.

### **CERI 8403 - Advanced Topics in Geophysics**

**Credit Hours:** (3) Former: (GEOP 7403; ESCI 7403-8403)

**Description** (GEOP 7403; ESCI 7403-8403). Topics may include aspects of theoretical seismology, rock rheology and convection, faulting mechanics, advanced potential field techniques, or advanced field methods. **PREREQUISITE(S):** Permission of Instructor.

### **CERI 8405 - Struct Interp Seism Reflec Dat**

**Credit Hours:** (3) Former: (ESCI 7405-8405) **Description** (ESCI 7405-8405) Practical application of reflection seismic method used in tectonic analysis of deformed belts and sedimentary basins, including case studies from around the world that emphasize integration of seismic reflection data with other surface and subsurface geological/ geophysical information, as well as use of restorable structural sections; basics of seismic processing are introduced in the framework of interpretation problems. **PREREQUISITE(S):** Permission of instructor.

### **CERI 8701 - Seminar in Geophysics**

**Credit Hours:** (3) Former: (GEOL 7641, GEOP 7701, ESCI 7701). **Description** (GEOL 7641, GEOP 7701, ESCI 7701).

### **CERI 8702 - Seminar in Seismology**

**Credit Hours:** (3) Former: (GEOP 7702-8702; ESCI 7702-8702). **Description** (GEOP 7702-8702; ESCI 7702-8702).

### **CERI 8703 - Seminar Earthquake Sys. Sci.**

**Credit Hours:** (3) **Description** Mechanics of fluid migration through the upper crust in the context of geothermal activity, volcanoes, faults and earthquakes. Covers porous media, Darcy flow, poroelastic effects, earthquake friction, stress distributions, volcano deformation, fault formation and evolution, geothermal reservoirs and induced seismicity.

**PREREQUISITE(S):** permission of the instructor. Standard Letter

### **CERI 9000 - Dissertation**

**Credit Hours:** (1-9) **Description** Student must research, write, and defend a thesis on a topic approved by major professor and advisory committee. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

## **Chemistry**

### **CHEM 6001 - Environmental Chemistry**

**Credit Hours:** (3) **Description** Chemical phenomena occurring in soil, atmospheric, and aquatic environments; consideration of natural resources and environment.

**PREREQUISITE(S):** CHEM 3310 and CHEM 3211.

### **CHEM 6020 - Industrial Chemistry**

**Credit Hours:** 3 **Description** Description: Survey of the chemical industry, historical background, processes involved in production of major commodity chemicals, role of research and development, patents and intellectual property. Three lecture hours per week. **PREREQUISITE(S):** CHEM 1120 with at least C-. Standard Letter

### **CHEM 6111 - Intermediate Inorganic CHEM**

**Credit Hours:** (3) **Description** Theoretical and applied inorganic chemistry, stressing the relationship of structure and bonding to the properties of elements and compounds; topics include introductory molecular orbital theory, coordination compounds and organometallics, ligand field theory, nonaqueous solvent systems, and reaction mechanisms.

**PREREQUISITE(S):** CHEM 3111 , or permission of the instructor.

### **CHEM 6180-6185 - Special Topics in Inorganic Chemistry**

**Credit Hours:** (0) **Description** Topics are varied and announced in online list of classes.

### **CHEM 6201 - Instrumental Analysis Lab**

**Credit Hours:** (1) **Description** Application of techniques of instrumental analysis in areas of atomic and molecular spectroscopy, mass spectrometry, electroanalytical chemistry and chromatography. Three laboratory hours per week.

**PREREQUISITE(S):** CHEM 3211 with at least C-  
**COREQUISITE(S):** CHEM 4211.

### **CHEM 6205 - Forensic Chemistry Lab**

**Credit Hours:** 1 **Description** Application of instrumental techniques for forensic chemical analysis of illicit drugs, fibers, paints, explosives, gunshot residues, glass, soil, and paper document evidence using advanced techniques such as stereo microscopy, chromatography, spectroscopy, and discriminant chemometrics. Three lab hours per week. 1 \$40 for the course (\$40 per credit hour)

**PREREQUISITE(S):** CHEM 3211 and CHEM 3201 with at least C-  
**COREQUISITE(S):** CHEM 6225

### **CHEM 6211 - Instrumntl Analysis**

**Credit Hours:** (3) **Description** Topics in modern analytical instrumental analysis; atomic and molecular spectroscopy, mass spectrometry, electroanalytical chemistry and chromatography. Three lectures hours per week.

**PREREQUISITE(S):** CHEM 3211 with at least C-.

### **CHEM 6225 - Forensic Chemistry**

**Credit Hours:** 3 **Description** In-depth topics in forensic chemistry including sampling methodology and the analysis of illicit drugs and poisons, textiles, paints, explosives, residues, glass, soil, and paper document evidence using advanced techniques such as stereo microscopy, chromatography, spectroscopy, and discriminant chemometrics. Three lecture hours per week. **PREREQUISITE(S):** CHEM 3211 with at least C-.

### **CHEM 6295-6299 - Special Topics in Analytical Chemistry**

**Credit Hours:** (0) **Description** Topics are varied and announced in online course listings.

### **CHEM 6301 - Intermediate Organic Laboratory**

**Credit Hours:** 2 **Description** Advanced laboratory techniques as applied to synthesis and purifications; analysis using GC-MS and NMR. Six laboratory hours per week.

**PREREQUISITE(S):** CHEM 3301 and CHEM3310 with at least a C-. Standard Letter

### **CHEM 6311 - Intermediate Organic Chemistry**

**Credit Hours:** (3) **Description** Further study of physical organic chemistry, spectroscopic methods of identification of organic compounds, modern organic synthesis, retrosynthesis, and polymer chemistry.

### **CHEM 6380-6399 - Special Topics in Organic Chemistry**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in online course listings.

### **CHEM 6406 - Molecular Spectroscopy Lab**

**Credit Hours:** (1) **Description** Determination of molecular structure of compounds using nuclear magnetic resonance spectroscopy, infrared spectroscopy, and mass spectrometry. Three laboratory hours per week. **PREREQUISITE(S):** CHEM 3301 with at least C- **PREREQUISITE(S)** or **COREQUISITE(S):** CHEM 6416.

### **CHEM 6411 - Advanced Physical Chemistry**

**Credit Hours:** (3) **Description** Advanced studies in physical chemistry with selected topics in thermodynamics, statistical mechanics, and quantum chemistry. **PREREQUISITE(S):** CHEM 3411 or permission of instructor.

### **CHEM 6416 - Molecular Spectroscopy**

**Credit Hours:** (3) **Description** Theory, instrumentation and applications of NMR, FT-IR, mass spectrometry, and UV-visible spectroscopy. Application and theory of other spectroscopic methods will be discussed briefly. Three lecture

hours per week. **PREREQUISITE(S):** CHEM 3310 and 3411.

### **CHEM 6480-6485 - Special Topics in Physical Chemistry**

**Credit Hours:** (0) **Description** Topics are varied and announced in online course listings.

### **CHEM 6501 - Lab Tech In Biochem**

**Credit Hours:** (2) *Cross listing* (Same as BIOL 6503)  
**Description** (Same as BIOL 6503). Biochemical techniques, analysis and design strategies; emphasis on properties of proteins/enzymes, including binding, catalysis, kinetics, electron and proton transport processes of intermediate metabolism; purification, characterization, and assay of enzymes using chromatography, spectroscopy, electrophoresis. Six laboratory hours per week; \$50 material fee. \$50 material fee. **PREREQUISITE(S):** CHEM 3501 **PREREQUISITE(S)** or **COREQUISITE(S):** CHEM 6511.

### **CHEM 6511 - Biochemistry I**

**Credit Hours:** (3) *Cross listing* (Same as BIOL 6511)  
**Description** (Same as BIOL 6511). Chemistry of amino acids and proteins as related to their properties in biochemical systems; protein conformation studies; enzymology; coenzymes and their functions; importance of pH and bioenergetics in catalysis; protein and carbohydrate metabolism. Three lecture hours per week.  
**PREREQUISITE(S):** CHEM 3511 with at least a C-.

### **CHEM 6512 - Biochemistry II**

**Credit Hours:** (3) *Cross listing* (Same as BIOL 6512)  
**Description** (Same as BIOL 6512). Continuation of CHEM 6511; chemistry of lipids: metabolism, membrane formation and function in cell signaling mechanisms and sensory transduction; chemistry of nucleotides, DNA, and RNA; mechanisms of information storage and transmission; advanced treatment of enzyme kinetics. Three lecture hours per week. **PREREQUISITE(S):** CHEM 6511 or BIOL 6511 with at least a C-.

### **CHEM 6520 - Medicinal Chemistry\*\***

**Credit Hours:** (3) Former: CHEM 6315 **Description** Introduction to principles of medicinal chemistry; structure, synthesis, and biochemical mechanism of action of major drug classes. **PREREQUISITE(S):** Permission of instructor.

### **CHEM 6580-6585 - Special Topics in Biochemistry**

**Credit Hours:** (0) **Description** Topics are varied and announced in online course listings.

### **CHEM 6603 - Materials Synthesis Lab**

**Credit Hours:** (1) **Description** Practical application of modern chemical synthesis; experimental studies in synthetic organic, organometallic, inorganic, polymer, and nanomaterial chemistry. Three laboratory hours per week.  
**PREREQUISITE(S):** CHEM 3301 **PREREQUISITE(S)** or **COREQUISITE(S):** CHEM 4613 Grades of A-F, or IP will be given.

### **CHEM 6613 - Materials Synthesis**

**Credit Hours:** (3) **Description** Principles, methods and applications of modern chemical synthesis; organic, organometallic, inorganic, polymer, and nanomaterial synthetic reactions and techniques; multi-step and interdisciplinary synthesis. Three lecture hours per week.  
**PREREQUISITE(S):** CHEM 3111 and CHEM 3310.

### **CHEM 7001 - Directed Research**

**Credit Hours:** (1-10) **Description** An original investigation undertaken with the supervision of a member of the graduate staff to be the basis of a contribution to the chemical literature. May be repeated for a maximum of 30 credit hours. May be repeated for a maximum of 30 credit hours Grades of S, U, or IP will be given.

### **CHEM 7011 - Accel CHEM Educator Profnl**

**Credit Hours:** (3) **Description** An accelerated general chemistry course designed to prepare educators and professionals with the content knowledge required for certification in high-school level chemistry or for other educational or professional endeavors. NOTE: This course will not be credited toward a Doctoral degree or Master's degree in Chemistry. Three lecture hours per week.

### **CHEM 7100-7109 - Special Topics in Inorganic Chemistry**

**Credit Hours:** (1-3) May be repeated for a maximum of 12 credit hours

**CHEM 7111 - Systematic Inor Chem**

**Credit Hours:** (3) **Description** Survey of inorganic chemistry, including electronic structure, bonding, stereochemistry, symmetry, and the physical and chemical properties of the elements and their compounds.

**PREREQUISITE(S):** CHEM 6111 or permission of instructor.

**CHEM 7112 - Structural Inor Chem**

**Credit Hours:** (3)

**CHEM 7200-7209 - Special Topics in Analytical Chemistry**

**Credit Hours:** (1-3) May be repeated for a maximum of 12 credit hours **PREREQUISITE(S):** Permission of instructor.

**CHEM 7211 - Adv Analytical Chem I**

**Credit Hours:** (3) **Description** Advanced treatment of topics in atomic and molecular spectroscopy, mass spectrometry, and surface analysis techniques. **PREREQUISITE(S):** CHEM 6211 or permission of instructor.

**CHEM 7212 - Adv Analytical Chem II**

**Credit Hours:** (3) **Description** Advanced treatment of topics in electrochemical methods and separation techniques. **PREREQUISITE(S):** CHEM 6211 or permission of instructor.

**CHEM 7300-7309 - Special Topics in Organic Chemistry**

**Credit Hours:** (1-3) May be repeated for a maximum of 12 credit hours **PREREQUISITE(S):** Permission of instructor.

**CHEM 7311 - Adv Organic Chemistry**

**Credit Hours:** (3) **Description** Physical approach to organic reaction mechanisms; reactive intermediates, aromaticity, and pericyclic reactions; introduction to advanced spectroscopic techniques and synthetic philosophy. **PREREQUISITE(S):** CHEM 6311 or permission of instructor.

**CHEM 7312 - Synthetic Organic Chem**

**Credit Hours:** (3) **Description** Principles of synthesis of complex organic molecules. **PREREQUISITE(S):** CHEM 6311 or permission of instructor.

**CHEM 7400-7409 - Special Topics in Physical Chemistry**

**Credit Hours:** (1-3) May be repeated for a maximum of 12 credit hours **PREREQUISITE(S):** Permission of instructor.

**CHEM 7411 - Elect Structure & Sym**

**Credit Hours:** (3) **Description** Basic quantum chemistry with applications to simple systems; group theory and its applications; molecular orbital theory including Huckel, SCF-LCAO-MO, and Qualitative MO methods.

**PREREQUISITE(S):** CHEM 6411 or permission of instructor.

**CHEM 7414 - Adv Quantum Chemistry**

**Credit Hours:** (3) **Description** Advanced treatment of topics in quantum chemistry with emphasis on electronic structure theories.

**CHEM 7500-7509 - Special Topics in Biochemistry**

**Credit Hours:** (1-3) May be repeated for a maximum of 12 credit hours **PREREQUISITE(S):** Permission of instructor.

**CHEM 7600 - Intro Grad Study Chem**

**Credit Hours:** (2) **Description** Laboratory instruction emphasizing communication skills, laboratory conduct and safety, and evaluation of performance. Two laboratory hours per week. Grades of S, U, or IP will be given. Two laboratory hours per week.

**CHEM 7711 - Approx Chem Model Meth**

**Credit Hours:** (3) **Description** Development of approximate classical and quantum mechanical techniques for modeling chemical systems, molecular mechanics, semiempirical quantum mechanics. **PREREQUISITE(S):** CHEM 7411 or permission of instructor.

**CHEM 7713 - Adv Solid St Phys/Chem**

**Credit Hours:** (3) **Description** Quantum mechanical treatment of electronic and vibrational states of metals, semiconductors and insulators, transport phenomena, superconductivity, physics of defects in solids.

**PREREQUISITE(S):** CHEM 7411 or permission of instructor.

### **CHEM 7910 - Spec Prob In Chem**

**Credit Hours:** (1-12) **Description** Individual investigation and report under the guidance of the student's major advisor. Grades of S, U, or IP will be given.

### **CHEM 7911 - Presentation**

**Credit Hours:** (1) **Description** Preparation and presentation of a short talk or lecture based on a laboratory or library project. Topic chosen in consultation with advisor. Grades of S, U, or IP will be given.

### **CHEM 7913 - Chemistry Seminar**

**Credit Hours:** (1) **Description** Formal meetings, presentation, and discussion of current topics of interest; students, faculty, and visiting scientists participate. Required of all regularly enrolled graduate students. A maximum of 4 credit hours from a combination of CHEM 6911, 7911, 8911, and 7-8913 may be counted toward the degree. Grades of S, U, or IP will be given.

### **CHEM 7996 - Thesis**

**Credit Hours:** (1-6) **Description** An original investigation undertaken with the supervision of a member of the graduate staff. The investigation will be the basis of a thesis. A maximum of 6 credit hours can be counted toward the thesis Master's degree. Grades of S, U, or IP will be given.

### **CHEM 8001 - Directed Research**

**Credit Hours:** (1-10) **Description** An original investigation undertaken with the supervision of a member of the graduate staff to be the basis of a contribution to the chemical literature. May be repeated for a maximum of 30 credit hours. May be repeated for a maximum of 30 credit hours.

### **CHEM 8100-8109 - Special Topics in Inorganic Chemistry**

**Credit Hours:** (1-3) May be repeated for a maximum of 12 credit hours.

### **CHEM 8111 - Systematic Inor Chem**

**Credit Hours:** (3) **Description** Survey of inorganic chemistry, including electronic structure, bonding, stereochemistry, symmetry, and the physical and chemical properties of the elements and their compounds.

**PREREQUISITE(S):** CHEM 6111 or permission of instructor.

### **CHEM 8112 - Structural Inor Chem**

**Credit Hours:** (3) **Description** Principles and applications of spectroscopic and physical methods to the solution of inorganic and organometallic problems, including electronic absorption spectra, photoelectron spectra, resonance Raman, NMR, EPR, Mossbauer Spectroscopy, EXAFS/XANES, X-ray diffraction. **PREREQUISITE(S):** CHEM 6111 or permission of instructor.

### **CHEM 8113 - Organometallics**

**Credit Hours:** (3) **Description** Structure and bonding in organometallics compounds, physical methods of characterization, common reaction mechanisms, and applications in catalysis. Three lecture hours per week.

**PREREQUISITE(S):** CHEM 6111 or CHEM 6311, or permission of instructor.

### **CHEM 8200-8209 - Special Topics in Analytical Chemistry**

**Credit Hours:** (1-3) May be repeated for a maximum of 12 credit hours **PREREQUISITE(S):** Permission of instructor.

### **CHEM 8300-8309 - Special Topics in Organic Chemistry**

**Credit Hours:** (1-3) **Description** Lecture and conferences covering selected areas of current interest (including heterocyclic chemistry, organometallic compounds, organosulfur compounds, alkaloids, steroids, terpenes, photochemistry, biosynthesis, stereochemistry, carbohydrates, new synthetic methods, high polymers, and advanced physicalorganic chemistry). May be repeated for a maximum of 12 credit hours **PREREQUISITE(S):** Permission of instructor.

### CHEM 8311 - Adv Organic Chemistry

**Credit Hours:** (3) **Description** Physical approach to organic reaction mechanisms; reactive intermediates, aromaticity, and pericyclic reactions; introduction to advanced spectroscopic techniques and synthetic philosophy. **PREREQUISITE(S):** CHEM 6311 or permission of instructor.

### CHEM 8312 - Synthetic Organic Chem

**Credit Hours:** (3) **Description** Principles of synthesis of complex organic molecules. **PREREQUISITE(S):** CHEM 6311 or permission of instructor.

### CHEM 8400-8409 - Special Topics in Physical Chemistry

**Credit Hours:** (1-3) May be repeated for a maximum of 12 credit hours **PREREQUISITE(S):** Permission of instructor.

### CHEM 8411 - Elect Structure & Sym

**Credit Hours:** (3) **Description** Basic quantum chemistry with applications to simple systems; group theory and its applications; molecular orbital theory including Huckel, SCF-LCAO-MO, and Qualitative MO methods. **PREREQUISITE(S):** CHEM 6411 or permission of instructor.

### CHEM 8414 - Adv Quantum Chemistry

**Credit Hours:** (3) **Description** Advanced treatment of topics in quantum chemistry with emphasis on electronic structure theories.

### CHEM 8416 - Advanced Biophysical Chemistry

**Credit Hours:** 3 **Description** Advanced study of biomolecular structures and properties and functions; Emphasis on the application of biophysical techniques to study biomolecular structures, properties and functions. Three lecture hours per week. **PREREQUISITE:** CHEM 6411 or permission of instructor Advanced study of biomolecular structures and properties and functions; Emphasis on the application of biophysical techniques to study biomolecular structures, properties and functions. Three lecture hours per week. **PREREQUISITE:** CHEM 6411 or permission of instructor **PREREQUISITE(S):** CHEM 6411

### CHEM 8500-8509 - Special Topics in Biochemistry

**Credit Hours:** (1-3) May be repeated for a maximum of 12 credit hours **PREREQUISITE(S):** Permission of instructor.

### CHEM 8601 - Chemistry Internship

**Credit Hours:** (1) **Description** Practical experience practicing chemistry at the facilities of a graduate internship sponsor. Schedule to be negotiated between the sponsor, the student, and the departmental internship coordinator. The course may be repeated as necessary as required by the internship requirements. Grades of S/U, or IP will be given.

### CHEM 8700-8709 - Special Topics in Computational Chemistry

**Credit Hours:** (1-3) May be repeated for a maximum of 12 credit hours **PREREQUISITE(S):** Permission of instructor.

### CHEM 8711 - Approx Chem Model Meth

**Credit Hours:** (3) **Description** Development of approximate classical and quantum mechanical techniques for modeling chemical systems, molecular mechanics, semiempirical quantum mechanics. **PREREQUISITE(S):** CHEM 7411 or permission of instructor.

### CHEM 8713 - Adv Solid St Phys/Chem

**Credit Hours:** (3) **Description** Quantum mechanical treatment of electronic and vibrational states of metals, semiconductors and insulators, transport phenomena, superconductivity, physics of defects in solids. **PREREQUISITE(S):** CHEM 7411 or permission of instructor.

### CHEM 8910 - Spec Prob In Chem

**Credit Hours:** (1-12) **Description** Individual investigation and report under the guidance of the student's major advisor. Grades of S, U, or IP will be given.

### CHEM 8911 - Advanced Presentation

**Credit Hours:** (1) **Description** Preparation and presentation of one-hour lecture as regularly scheduled department seminar. Topic chosen in consultation with advisor. Grades of S, U, or IP will be given.



## CHEM 8913 - Chemistry Seminar

**Credit Hours:** (1) **Description** Formal meetings, presentation, and discussion of current topics of interest; students, faculty, and visiting scientists participate. Required of all regularly enrolled graduate students. A maximum of 4 credit hours from a combination of CHEM 6911, 7911, 8911, and 7-8913 may be counted toward the degree. Grades of S, U, or IP will be given.

## CHEM 9000 - Dissertation

**Credit Hours:** (1-10) **Description** A maximum of 32 dissertation hours is permitted. A minimum of 6 credit hours is required for the doctoral degree. Grades of S, U, or IP will be given.

## Child Development and Family Studies

### CDFS 6915 - Rethinking Challenging Behavior

**Credit Hours:** 3 **Description** This fully online course, designed by ThinkKids, teaches a revolutionary, evidence-based approach called Collaborative Problem Solving® (CPS) for helping children with behavioral challenges. Through training, support and clinical services, this course promotes an understanding that challenging kids lack the skill, not the will, to behave well – specifically skills related to problem solving, flexibility and frustration tolerance. Unlike traditional models of discipline, the CPS approach avoids the use of power, control and motivational procedures and instead focuses on building helping relationships and teaching at-risk kids the skills they need to succeed. This course will provide you with foundational knowledge of and strategies for using CPS. Standard Letter

## Chinese

### CHIN 7101 - Advanced Business Chinese I

**Credit Hours:** (3) **Description** Basic language skills that are most helpful in business interactions with Chinese-speaking communities with a focus on business vocabulary and expressions. Introduction of Chinese business culture and etiquette. **PREREQUISITE(S):** CHIN 3302.

### CHIN 7102 - Advanced Business Chinese II

**Credit Hours:** (3) **Description** Further development on business language skills with a focus on writing ability and comprehension/translation of business documents. **PREREQUISITE(S):** CHIN 7101 or equivalent.

## City and Regional Planning

### PLAN 6002 - Urban Food Security

**Credit Hours:** (3) **Description** Origins, evolution, and current state of urban food distribution and accessibility; current challenges encountered by poor and working class individuals and families in accessing food in economically distressed areas; examination of alternative policies, plans, and programs designed to promote more equitable access to healthy foods in inner city communities. Course will include community-based field work. **PREREQUISITE(S):** Approved planning experience.

### PLAN 6003 - Community Economic Development

**Credit Hours:** (3) **Description** Origins, evolution, and current state of community-based economic development. Course will include community-based field work.

### PLAN 6004 - Community Organizing

**Credit Hours:** (3) **Description** Origins, evolution, and current state of direct action organizing in the United States; principles, methods, and techniques of grassroots organizing. Course will include community-based field work.

### PLAN 6201 - Urbanization/Environment

**Credit Hours:** (3) *Cross listing* (Same as ESCI 6201; GEOG 6201) **Description** (Same as ESCI 6201; GEOG 6201). A study of the ways humans have changed the natural environment by urbanization and how physical features and processes influence the development and function of cities.

### PLAN 6206 - Housing Planning and Policy

**Credit Hours:** 3 **Description** Explores U.S. and international housing policy, finance, and planning specifically from a social, racial, and economic justice perspective. Traces the history of housing, starting with the invention of property, rent and ownership and continuing through city-building, redlining, suburbanization. Considers policy and planning

tools for improving the equity and affordability of housing.  
Standard Letter

### **PLAN 6212 - Nature-Based Strategies in Planning**

**Credit Hours:** 3

**Description**

This course provides a comprehensive approach to understanding the need for natural-based strategies (NBS) to confront environmental challenges in communities. It takes a global perspective and demonstrates how providing for urban infrastructure in this century is a balancing act between the traditional gray infrastructure and green infrastructure.  
Standard Letter

### **PLAN 6231 - Water Science Management**

**Credit Hours:** (3) *Cross listing* (Same as ESCI 6213; GEOG 6231) **Description** (Same as ESCI 6231; GEOG 6231). Study of hydrologic processes and their application to needs of cities, industry, agriculture, and recreation.

### **PLAN 6261 - Plan/Sustainable Cities/Region**

**Credit Hours:** (3) Former: (ESCI 6261) **Description** (ESCI 6261). Multidisciplinary and multi-scaled approach to understanding the sustainability of natural and built environments in planning cities and regions; methods for measuring sustainability; emerging development concepts and practices; technology, efficiency, social equity and public health implications of sustainability; sustainable urban/regional form of the future. **PREREQUISITE(S):** CIVL 3121, 3322.

### **PLAN 6430 - Social and Economic Geography with GIS**

**Credit Hours:** 3 *Cross listing* ESCI 6430 **Description** Geographic analysis of social and spatial characteristics of economic activities and their distribution. Applications of data analysis and output using ArcGIS software package. Standard Letter

### **PLAN 6431 - Urban Geography**

**Credit Hours:** 3

*Cross listing* ESCI 6431 **Description**

Geography of urban processes and forms; cultural, social, economic, and political aspects of the contemporary city.  
Standard Letter

### **PLAN 6443 - Transportation Planning**

**Credit Hours:** (3) *Cross listing* (Same as ESCI 6443; GEOG 6443) **Description** (Same as ESCI 6443; GEOG 6443). Planning for various transportation modes and networks and the impact they have on urban land use and contemporary development problems. **PREREQUISITE(S):** CIVL 3131.

### **PLAN 6502 - Computer Cartography**

**Credit Hours:** (3) *Cross listing* (Same as ESCI 6502 ; GEOG 6502) **Description** (Same as ESCI 6502; GEOG 6502). Instruction in use of computer mapping programs as effective techniques for visual presentation of a wide variety of data. Two lecture, two laboratory hours per week. Two lecture, two laboratory hours per week. **PREREQUISITE(S):** CIVL 4122, 4135.

### **PLAN 6515 - Geographic Info Science**

**Credit Hours:** (3) *Cross listing* (Same as ESCI 6515; GEOG 6515) **Description** (Same as ESCI 6515; GEOG 6515). Introduction to the basic concepts, components, and functions of Geographic Information Science using ARC/INFO GIS; topics include concepts and structure of spatial data, database planning and design, data quality control, automating spatial data, attribute data management, spatial manipulation, and spatial analysis techniques. **PREREQUISITE(S):** Consent of instructor.

### **PLAN 6521 - Quantitative Methods**

**Credit Hours:** (3) *Cross listing* (Same as ESCI 6521, GEOG 6521) **Description** (Same as ESCI 6521, GEOG 6521). An introduction to quantitative methods in spatial analysis. **PREREQUISITE(S):** CIVL 3140.

### **PLAN 6800-6810 - Special Topics in City and Regional Planning**

**Credit Hours:** (3) **Description** Topics vary and are announced in the online class listing.

### **PLAN 7000 - Planning the American City**

**Credit Hours:** (3) **Description** Introduces the origins, evolution, and current state of American city planning. Examines the role planners play in promoting more sustainable, vibrant, and just towns, cities, and regions. Reviews critical issues confronting professionals engaged in such areas of specialization as: land use, site planning, urban transportation, affordable housing, community development, capital budgeting, and urban design.

### PLAN 7002 - Planning Theory & Perspectives

**Credit Hours:** (3) **Description** Theories of city planning with emphasis on decision-making, managing change and evaluating influence. Explores the multiple frameworks and theories that underpin approaches to planning and policy interventions.

### PLAN 7004 - Land Use Controls

**Credit Hours:** (3) **Description** Methods of regulating land use, including zoning, subdivision controls, and growth management techniques; legal framework for planning, including enabling legislation, local ordinances, and significant judicial decisions.

### PLAN 7006 - Comprehensive Planning Studio

**Credit Hours:** (3) **Description** Individual and group practice in collection, analysis, and presentation of field data on selected planning problems. Client-based field course that requires the synthesis and application of knowledge, skills, and competencies acquired in the core planning curriculum.

### PLAN 7007 - Project Planning Studio

**Credit Hours:** (3) **Description** Application of skills and competencies toward implementation strategies for specific planning project(s) typically identified in a preceding Comprehensive Planning Studio course. Programs, urban design proposals, etc. will address critical issues affecting local communities and integrate ecological, environmental, economic, social, historical, and cultural perspectives.

### PLAN 7008 - Site Planning

**Credit Hours:** (3) **Description** Principles and methods of preparing site plan for development project with an emphasis on sustainable urban and regional form; techniques of determining suitability/sustainability of site resources and

compatibility of land uses; use of GIS and CAD software in site planning and design; site impact analysis, development regulations, and site plan review procedures.

### PLAN 7011 - Planning & the Metro Economy

**Credit Hours:** (3) **Description** Introduces key economic and fiscal issues in local government, explores the relationship between planning and urban/suburban/rural fiscal health. Considers: economic role of government, public investment, economic impacts of growth and development, and local redevelopment tools.

### PLAN 7012 - Analysis for Comm Planning

**Credit Hours:** (3) **Description** Methods used in the assessment of current socio-economic conditions of communities, trend analysis, and forecasts of future population and employment for the purpose of developing comprehensive plans and other analyses common to the planning profession.

### PLAN 7101 - Regional Planning

**Credit Hours:** (3) *Cross listing* (Same as ESCI 7101) **Description** (Same as ESCI 7101) Origins of regionalism, emergence of new regionalism, delineating and designing the region; economic, ecologic, and social principles for planning the regional city; public policy in region-building; regional planning organization and governance; the functions and problems of regional plan preparation, and plan implementation. **PREREQUISITE(S):** CIVL 3180, 3182. Grades of S, U, or IP will be given.

### PLAN 7201 - Smart City and Urban Infrastructure

**Credit Hours:** (3) Former: 7201 **Description** This course is designed to explore theoretical and technical dimensions of the emerging topic of smart city and urban infrastructure, an interdisciplinary realm of research and practice that includes various infrastructure systems and services. The course aims to investigate how urban infrastructure is defined, delivered, and financed. The first part of the course deals with theoretical foundations of community support system including social and economic underpinnings of the demand for urban infrastructure. The second part reviews the range and types of city elements that serve urban communities. The third part explores how urban infrastructure can be implemented—to either serve existing development patterns more efficiently or

can be planned to provide service to new development more sustainably. Standard Letter

## PLAN 7202 - Land Use Planning

**Credit Hours:** (3) **Description** Theory and practice of land use planning, with emphasis on methods of land use analysis and economic and social basis for land use decisions.

## PLAN 7203 - Ecology and Planning

**Credit Hours:** (3) **Description** This course proposes an ecological approach to planning and design, aiming at creating an understanding of how human society interacts with ecosystems. It introduces theories and practices of planning and design framed into the ecological paradigm, especially focused on social, economic, environmental sustainability. It covers topics such as ecological thought, environmental issues, ecological cycles (water, energy, waste), thermodynamics, ecological footprint analysis, environmental justice movements, de-growth theory, ecological planning and design. It includes the study of planning and design practices in urban and rural areas in USA and Europe, with a special emphasis on community-based experiences in both contexts. **PREREQUISITE(S):** CIVL 3137 or permission of instructor. **COREQUISITE(S):** CIVL 4151 or permission of instructor. Grades of S, U, or IP will be given.

## PLAN 7204 - Urban Revitalz Plan

**Credit Hours:** (3) **Description** Changing urban land uses, first in areas that must improve or rebuild obsolete patterns, functions, and forms; and second in areas with acceptable uses, structures, and institutions, which in the interest and welfare of all the people must have additional space for growth and expansion. **PREREQUISITE(S):** CIVL 3103 and 3161.

## PLAN 7205 - Sem Urban Design

**Credit Hours:** (3) **Description** History and theory of urban form and implications for the design of cities; survey of urban design techniques. **PREREQUISITE(S):** CIVL 3103 and 3161.

## PLAN 7207 - GIS for City Planning

**Credit Hours:** 3

**Description** This course will introduce students to Geographic Information Systems (GIS) software and its common

applications in the practice of city planning. GIS allows the user both to analyze and communicate geospatial and integrated tabular data with a high degree of flexibility and is a common feature of many jobs in the planning field. This course will specifically cover basic concepts in cartography, GIS data structures and multi-layer maps, as well as advanced analysis features focused on transportation networks, 3-D mapping, raster layers and socio-demography. We will primarily make use of ESRI's ArcGIS software suite—the current industry standard—but will also introduce the similar QGIS, an open-source alternative currently growing in popularity.

Following this course, students will be able to:

- Collect, manipulate and display geospatial data
- Perform geospatial analyses using those and additional tabular data
- Effectively communicate planning-related geospatial information to policy makers and the general public

## PLAN 7208 - Economics of Cities

**Credit Hours:** (3) **Description** Focuses on economics of spatial structure and urban problems; introduces economic theories explaining where and how cities grow; uses economic concepts to explore issues such as poverty, transportation and mass transit, housing and homelessness, education, employment, crime, zoning and land use, suburbanization and sprawl, metropolitan government, and public finance. **PREREQUISITE(S):** CIVL 3181.

## PLAN 7210 - Research Problems Seminar

**Credit Hours:** (3) **Description** Provides students with a process for developing a research proposal by using building-block assignments with a formal timeline and providing opportunities for consistent feedback. Students will review and critique each others' written assignments and use class time to workshop ideas. Students will be expected to develop a clear research question, supported by relevant and useful literature, that leads to an appropriate and executable research methodology. **PREREQUISITE(S):** CIVL 3181, 4111 or permission of instructor.

## PLAN 7302 - Geographic Environ Anly

**Credit Hours:** (3) *Cross listing* (Same as ESCI 7201; GEOG 7201) **Description** (Same as ESCI 7201; GEOG 7201). Analytical and qualitative critique of the physical environment with emphasis on environmental quality, including air and water quality standards, soil erosion, solid waste management,

and nuisance control. **PREREQUISITE(S):** Permission of instructor.

### **PLAN 7504 - Sem Geog Info Systems**

**Credit Hours:** (3) *Cross listing* (Same as ESCI 7504; GEOG 7504) **Description** (Same as ESCI 7504; GEOG 7504). Discussion of short- and long-term GIS science research topics by University Consortium of Geographic Information Science (UCGIS), such as internet GIS, possible effects of internet GIS on society, public participation GIS, participatory GIS, GIS for homeland security, geo-spatial society, and geo-visualization. **PREREQUISITE(S):** Permission of the instructor.

### **PLAN 7610-7620 - Special Topics in City and Regional Planning**

**Credit Hours:** (3) **Description** Topics vary and are announced in the online class listing.

### **PLAN 7701 - Directed Research**

**Credit Hours:** (1-3) **Description** Independent investigation directed toward research problems in city and regional planning May be repeated for a maximum of 3 hours credit. Grades of A-F, or IP will be given. May be repeated for a maximum of 3 hours credit **PREREQUISITE(S):** CIVL 3103.

### **PLAN 7708 - Planning Practice**

**Credit Hours:** (3) **Description** Practical skills in operating a planning office in both public and private sectors. **PREREQUISITE(S):** Permission of instructor.

### **PLAN 7801 - Design Collaborative Studio**

**Credit Hours:** (3) **Description** Collaborative fieldwork designed to address a complex community challenge, bring to bear knowledge and skills from a variety of perspectives and from previous coursework. Work with community stakeholders to develop the scope and response to the problem, collect and analyze data, describe existing conditions, conduct best practices research, develop strategies, and prepare a final product or products (e.g., community action plan, policy paper, etc.). Topics include appropriate products, building materials and techniques, sustainable design, site and environmental issues, codes and standards, and client needs. May be repeated for a maximum of 6 credit hours.

### **PLAN 7890 - Planning Internship**

**Credit Hours:** (1) **Description** Experiential learning assignment to be achieved via an approved work assignment with a public or private planning organization or a member of the planning faculty. NOTE: Does not count toward degree requirements. Grades of S, U, or IP will be given. **PREREQUISITE(S):** Permission of instructor.

### **PLAN 7896 - Capstone Project**

**Credit Hours:** (1-3) **Description** Preparation of a research paper that exhibits mastery of process and substantive area of planning. May be repeated for a maximum of 12 hours credit. Grades of S, U, or IP will be given. May be repeated for a maximum of 12 hours credit

### **PLAN 8208 - Economics of Cities**

**Credit Hours:** (3)

## **Civil Engineering**

### **CIVL 6011 - Transformative Technologies in Engineering**

**Credit Hours:** 3 *Cross listing* EECE 6011 **Description** Introduction to transformative engineering design, analysis, inspection, and management technologies such as Intelligent Transportation Systems, GIS, drones, information technologies, etc.; interdisciplinary project-based learning experience with industry focused problems. \$45 per credit hour

### **CIVL 6122 - Structural Analysis II**

**Credit Hours:** (3) **Description** Analytical and numerical solutions for statically indeterminate structures. **PREREQUISITE(S):** CIVL 3121, 3322 or equivalent.

### **CIVL 6131 - Inter Steel Design**

**Credit Hours:** (3) **Description** Design of plate girders and composite beams; moment connections; building design. **PREREQUISITE(S):** CIVL 3131 or equivalent.

### **CIVL 6136 - Inter Rein Concr Design**

**Credit Hours:** (3) **Description** Design of two-way slab systems; column design including length effects; integrated building design using current code provisions.

**PREREQUISITE(S):** CIVL 4122, 4135 or equivalents.

### **CIVL 6140 - Environmental Engr Design**

**Credit Hours:** (3) **Description** Detailed design of one component of an environmental engineering system with appropriate consideration of interactions with other components; design standards, procedures, and legal constraints emphasized.

### **CIVL 6143 - Physical/Chem Treatment**

**Credit Hours:** (3) **Description** Basic physical-chemical treatment concepts, including sedimentation, filtration, adsorption, neutralization, coagulation, air stripping, dissolved air flotation, disinfection, and ion exchange, with application of basic concepts to design of water and wastewater treatment systems components. **PREREQUISITE(S):** CIVL 3140 or equivalent.

### **CIVL 6144 - Biol Wastewater Treat**

**Credit Hours:** (3) **Description** Basic biological treatment concepts, including kinetics, activated sludge, fixed-film systems, lagoon systems, and sludge digestion, with application of basic concepts to design of biological wastewater treatment system components.

**PREREQUISITE(S):** CIVL 3140 or equivalent.

### **CIVL 6149 - Pump Station Design**

**Credit Hours:** (3) **Description** Detailed design of sumps, pumps, piping, valves, and controls associated with the design of pumping systems for wastewater, process water, drinking water, and storm water. **PREREQUISITE(S):**

**PREREQUISITES:** CIVL 3180, 3182 or equivalent.

### **CIVL 6152 - Applied Soil Mechanics**

**Credit Hours:** (3) **Description** Subsurface exploration, foundation types, foundation construction, selection of foundation type and basis of design, earth retaining structures, and slope stability. **PREREQUISITE(S):** CIVL 4151 or equivalent.

### **CIVL 6155 - Pavement Design and Evaluation**

**Credit Hours:** (3) **Description** Structural design of concrete and asphalt pavements, design of surface and subsurface pavement drainage; performance evaluation of existing pavements; pavement rehabilitation and pavement management. **PREREQUISITE(S):** CIVL 3137 or permission of instructor. **COREQUISITE(S):** CIVL 4151 or permission of instructor.

### **CIVL 6162 - Traffic Engineering**

**Credit Hours:** (3) **Description** Traits and behavior patterns of road users and their vehicles, including traffic signs and signals, pavement markings, hazard delineation, capacity, accidents, and parking analysis. **PREREQUISITE(S):** CIVL 2103(formerly 3103) and CIVL 3161 or equivalents.

### **CIVL 6163 - Airport Plnng & Design**

**Credit Hours:** (3) **Description** Aeronautical demand and air traffic control; airport and runway configuration; capacity and delay analysis; geometric design of runways and taxiways; airport access and parking; ground movements and baggage movements. **PREREQUISITE(S):** CIVL 2103 (formerly 3103) and CIVL 3161 or equivalents.

### **CIVL 6164 - Route Location & Design**

**Credit Hours:** (3) **Description** Elements of route location and design; emphasis on horizontal and vertical alignment, curvature, gradient, and sight distance. Two lecture, three laboratory hours per week. **PREREQUISITE(S):** CIVL 1101 and 3161 or equivalents.

### **CIVL 6165 - Introduction to Transportation System Management and Operations**

**Credit Hours:** 3 **Description** Overview of transportation management and operations from a systems perspective using traffic, transit, and freight examples. **PREREQUISITE(S):** CIVL 2103 or equivalent Standard with IP

### **CIVL 6180 - Adv Hydrology/Hydraulics**

**Credit Hours:** (3) **Description** Current methods and techniques used in hydrologic and hydraulic analysis for the design of water resources projects; watershed hydrology, flood plain management, and sediment transport. Engineering Course Fee **PREREQUISITE(S):** CIVL 3181 or equivalent.

### **CIVL 6185 - Open-Channel Flow**

**Credit Hours:** 3 **Description** Fundamentals, detailed analysis, and computations of steady-state flows with a free surface for the design of water resources projects and storm water infrastructure: Spatially uniform and varied flows, critical flow, energy losses, hydraulic jumps and other applications of the principle of conservation of momentum, flow profiles. Engineering Course Fee **PREREQUISITE(S):** CIVL 3180 and CIVL 3181 **COREQUISITE(S):** CIVL 3182

### **CIVL 6190 - Water Resources Planning and Management**

**Credit Hours:** (3) **Description** Application of engineering principles to planning and management of multipurpose water resources projects; various physical components and appurtenances of water resources projects; and economic, financial, and social feasibility of various purposes. **PREREQUISITE(S):** CIVL 3181 and 4111 or permission of instructor.

### **CIVL 6211 - Physical Hydrology**

**Credit Hours:** 4 *Cross listing* ESCI 6211 **Description** Physical hydrogeology and development of groundwater; groundwater in hydrologic cycle; aquifer characteristics and tests. \$25 material fee. Engineering course fee.

### **CIVL 6213 - Field Methods in Hydrology**

**Credit Hours:** 3 *Cross listing* ESCI 6213 **Description** Introduction to and practice of field methods in solving hydrologic problems. Engineering Course Fee

### **CIVL 6341 - Aqueous Geochemistry**

**Credit Hours:** 3 *Cross listing* ESCI 6341 **Description** Physical chemistry of aqueous solutions as it applies to geochemical processes on earth's surface. Engineering Course Fee

### **CIVL 6900-6910 - Special Topics in Civil Engineering**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in the online class listings.

### **CIVL 7001 - Engineering Analysis**

**Credit Hours:** (3) *Cross listing* CERI 7130 **Description** (Same as CERI 7130). Numerical integration of linear and

non-linear differential equations; finite difference methods; systems of linear algebraic equations; applications to engineering problems. **PREREQUISITE(S):** Permission of instructor. Grades of A-F, or IP will be given.

### **CIVL 7002 - Prog Tools for Scits & Engrs**

**Credit Hours:** (3) *Cross listing* (Same as CERI 7102). **Description** An introduction to applied programming and programming tools for scientists and engineers at a graduate level with limited background on computer programming. **PREREQUISITE(S):** Permission of instructor.

### **CIVL 7012 - Prob Meth In Engr \*\***

**Credit Hours:** (3) **Description** Concepts and methods of probability and statistics that are essential for modeling engineering problems under conditions of uncertainty; application to practical problems. **PREREQUISITE(S):** CIVL 2103 (formerly 3103) or equivalent.

### **CIVL 7111 - Computatnl Mechncs**

**Credit Hours:** (3) **Description** Advanced mathematical modeling techniques using finite difference, finite element, and boundary element formulations to solve civil engineering problems.

### **CIVL 7112 - Plstc Dsgn Steel Strctr**

**Credit Hours:** (3) Former: (7122) **Description** Plastic analysis and design of steel structures; application to multistory buildings.

### **CIVL 7113 - Prestressed Cncrte Dsgn**

**Credit Hours:** (3) Former: (7121) **Description** Theory of prestressing; design of prestressed concrete beams, slabs, and box girders; statically determinate and indeterminate structures.

### **CIVL 7114 - Elastic Stability**

**Credit Hours:** (3) **Description** Classical theory of buckling of rods, plates, and shells.

### **CIVL 7115 - Plate Shell Struc \*\***

**Credit Hours:** (3) *Cross listing* (Same as MECH 7115) **Description** Analysis of rectangular and circular flat plates;

large deflections of plates; variational methods; analysis of shells as surfaces of revolution under symmetric and unsymmetric loading.

### **CIVL 7116 - Structural Dynamics**

**Credit Hours:** (3) **Description** Dynamic analysis of single-degree-of-freedom structures; response to general dynamic loading; modal analysis of multistory shear buildings; introduction to nonlinear and random vibration.

### **CIVL 7117 - Finite Elem Struc Mech**

**Credit Hours:** (3) **Description** Structural idealization, stiffness properties of elements, structural analysis of element assemblage; plane stress and strain problems; applications to problems of plates and shells; computer solution of large systems.

### **CIVL 7119 - Earthquake Resist Design \*\***

**Credit Hours:** (3) **Description** Earthquake strong motion; response spectrum analysis; seismic design of buildings.

### **CIVL 7123 - Seismic Risk Assess**

**Credit Hours:** (3) **Description** Evaluation of seismic hazard and site-specific ground motion for critical facilities; analysis of structural reliability and seismic risk.

### **CIVL 7125 - Earthquake Ground Motion Simul**

**Credit Hours:** (3) *Cross listing* (Same as CERI 7124). **Description** Contemporary methods in earthquake ground motion simulation, applications in seismic hazard analysis and engineering, state-of-the-art simulation software. **PREREQUISITE(S):** Permission of instructor.

### **CIVL 7126 - Data Analysis in Geophysics**

**Credit Hours:** (3) *Cross listing* (Same as CERI 7104) **Description** Through project-based work, students will develop programming skills using high-level software tools commonly used in geophysics research, including the Unix environment, Python, MATLAB, Seismic Analysis Code, AWK, Shell Scripts, and Generic Mapping Tools. **PREREQUISITE(S):** Permission of instructor.

### **CIVL 7127 - Signal Processing Earth Sci**

**Credit Hours:** (3) *Cross listing* (Same as CERI 7106)

**Description** Fundamentals of digital processing of geophysical data, both purely mathematical and applied aspects with attention to digital seismograms and gravity and magnetic data. **PREREQUISITE(S):** MATH 1920 or equivalent.

### **CIVL 7128 - Inverse Methods in Geophysics**

**Credit Hours:** (3) *Cross listing* (Same as CERI 7260)

**Description** Methods for parameter estimation in earth sciences, including review of linear algebra and vector spaces, introduction to probability and statistics, and solution of inverse linear and nonlinear problems; students will solve an inverse problem in their field of interest.

**PREREQUISITE(S):** Linear Algebra (MATH 3242 or equivalent) or permission of instructor.

### **CIVL 7132 - Advanced Soil Mech**

**Credit Hours:** (3) **Description** Stresses in soil masses; pore-water stresses; consolidation and settlement; shear strength; applications to problem solution.

### **CIVL 7133 - Slopes and Embankments**

**Credit Hours:** (3) **Description** Analysis, design, and construction of earth dams, levees, embankments and slopes; soil stabilization; seepage, drainage, and flow nets.

**PREREQUISITE(S):** CIVL 4152/CIVL 6152 or permission of instructor.

### **CIVL 7135 - Soil Dynamics**

**Credit Hours:** (3) **Description** Theory and measurements of dynamic properties of soils and their applications in seismic hazards assessments, earthquake engineering design, and geophysics studies.

### **CIVL 7136 - Prob & Earthquake Haz Anly**

**Credit Hours:** (3) *Cross listing* (same as ESCI 7204, CERI 7204) **Description** Fundamentals of basic probability, seismicity analysis, ground motion attenuation and site effects, seismic hazard analysis, and uncertainty analysis; students will perform a probabilistic seismic hazard analysis for a region of their interest. **PREREQUISITE(S):** Permission of instructor.

### **CIVL 7137 - Geotechnical Earthquake**



**Credit Hours:** (3) **Description** Earthquake magnitude and intensity, seismic hazard evaluation using deterministic and probabilistic approaches, site response analyses and ground motion amplification, liquefaction, and response to earth structures.

### **CIVL 7138 - Shallow and Deep Foundations**

**Credit Hours:** (3) **Description** Analysis and design of footing, mat, pile, and drilled-shaft foundations. Three lecture hours a week. **PREREQUISITE(S):** CIVL 4152/CIVL 6152 or permission of instructor.

### **CIVL 7139 - Earth Retaining Structures**

**Credit Hours:** (3) **Description** Types of earth retaining structures. Retaining wall selection. Lateral earth pressure theories. Design of conventional, MSE, soil-nailed, and tied-back walls. Three lecture hours a week. **PREREQUISITE(S):** CIVL 4152/CIVL 6152 or permission of instructor.

### **CIVL 7141 - Water Trt Plant Dsgn**

**Credit Hours:** (3) **Description** Design of a water treatment plant; application of fundamental water treatment theory; evaluation of alternatives; selection and design of optimum alternative. **PREREQUISITE(S):** CIVL 4143/CIVL 6143 or permission of instructor.

### **CIVL 7142 - Wastewater Trt Plnt Dsgn**

**Credit Hours:** (3) **Description** Design of a wastewater treatment plant; application of fundamental wastewater treatment theory; evaluation of alternative; selection and design of optimum alternative. **PREREQUISITE(S):** CIVL 4144/CIVL 6144 or permission of instructor.

### **CIVL 7143 - Solid Waste Mgmt**

**Credit Hours:** (3) **Description** Systems approach to solid waste generation, characterization, collection, transportation, and disposal; emphasizes both domestic and industrial wastes.

### **CIVL 7144 - Residuals Mgmt**

**Credit Hours:** (3) **Description** Systems approach to unique solid wastes (inflammable industrial, sewage sludge, etc.), as well as resource recovery and energy conversion as disposal practices.

### **CIVL 7145 - Adv Biological Treatmnt**

**Credit Hours:** (3) **Description** In-depth study of biokinetics applicable to waste management; model evaluations; hazardous and non-hazardous wastes. **PREREQUISITE(S):** CIVL 4144/CIVL 6144 or permission of instructor.

### **CIVL 7146 - Adv Phys/Chem Treatmnt**

**Credit Hours:** (3) **Description** An in-depth analysis of theory and practice of advanced water and wastewater treatment processes; emphasis on adsorption processes, ion exchange, membrane processes, chemical oxidation, land treatment, nutrient removal, and sludge treatment and disposal. **PREREQUISITE(S):** CIVL 4143/CIVL 6143 or permission of instructor.

### **CIVL 7147 - Hazardous Waste Mgmt**

**Credit Hours:** (3) **Description** Design of hazardous waste management systems; application of current design theories; review of regulatory requirements.

### **CIVL 7154 - Indust Wastewater Treat**

**Credit Hours:** (3) **Description** In-plant control measures and end-of-pipe treatment technologies for reducing conventional and toxic industrial pollutant discharges; emphasis on water conservation, wastewater recycle/reuse, and optimum treatment strategies for waste streams from major industries.

### **CIVL 7162 - Transportation Sys Eval**

**Credit Hours:** (3) **Description** Transportation problems, goals, and objectives; evaluation and decision-making techniques; measurement of variables and intangibles in transportation decisions, cost allocation and benefit transfer, risk and uncertainty; financing and implementation; differential impacts of transportation improvements.

### **CIVL 7164 - Urban Transport Engr**

**Credit Hours:** (3) **Description** A review of the transportation problem as it relates to development patterns in American cities. The theory and application to engineering and socioeconomic factors directed toward the formulation of models for conducting transportation studies.

### **CIVL 7165 - Geom Dsgn Trnsprtn Syst**

**Credit Hours:** (3) **Description** Design of streets and highways with emphasis on the factors and features controlling safe and efficient vehicle operation; applications of design concepts to urban and rural systems, intersections, interchanges, safety appurtenances, and parking facilities. **PREREQUISITE(S):** CIVL 4164/CIVL 6164 or permission of instructor.

### **CIVL 7166 - Design Hgwy Airpt Pvmt**

**Credit Hours:** (3) **Description** Design practices, materials, and testing of flexible and rigid pavements.

### **CIVL 7168 - Traffic Engr Operations**

**Credit Hours:** (3) **Description** Theory of traffic control: traffic laws and ordinances; application of traffic control devices; analysis and design of traffic signal systems, parking control and design pedestrian control; one-way and unbalanced lane operation, roadway illumination; selected operational problems. **PREREQUISITE(S):** CIVL 4162/CIVL 6162 or permission of instructor.

### **CIVL 7169 - Mass Transit Systems**

**Credit Hours:** (3) **Description** Operational analysis of equipment and facility design and service characteristics of urban mass transit systems; analysis of capacity, speed, accessibility, terminal operations; study of financing, decision-making, administration and marketing policies and practices, trends in future transit technology.

### **CIVL 7170 - GW Cont Fate/Transport**

**Credit Hours:** (3) **Description** Elements of ground water contamination and migration; study of various contaminant transport modeling techniques; analysis of numerical dispersion and stability criteria; chemical reactions; discussion of analytical solutions.

### **CIVL 7173 - Environmental Geochem**

**Credit Hours:** (3) **Description** Inorganic and organic geochemical concepts applied to transport and fate of contaminants in surface water, ground water, and sediment. **PREREQUISITE(S):** ESCI 6341 or CIVL 6341 and permission of instructor.

### **CIVL 7177 - Quantitative Hydrogeol**

**Credit Hours:** (3) **Description** Analysis of hydrogeological parameters; geostatistical techniques for processing spatial data for use in hydrogeological analyses. Engineering Course Fee **PREREQUISITE(S):** CIVL 7012 or permission of instructor.

### **CIVL 7181 - Statistical Hydrol Modl**

**Credit Hours:** (3) **Description** Current statistical techniques used in stochastic, deterministic, and parametric hydrologic models; emphasis on probability and frequency analysis; time series analysis and synthesis; sensitivity analysis. Engineering Course Fee

### **CIVL 7185 - Hydraul Open Channels**

**Credit Hours:** (3) Former: (7148) **Description** Phenomena accompanying flow of water in open channels, uniform and varied flow, critical conditions, backwater curves or water surface profiles, hydraulic jumps, hydraulic drops, and various design applications.

### **CIVL 7186 - Hydrological Processes**

**Credit Hours:** 3 **Description** Physically-based description of hydrologically-relevant energy and water fluxes, and of near-surface hydrological processes; applications to water budgets and rainfall-runoff modelling. Standard with IP

### **CIVL 7191 - Computer Appl Water Res**

**Credit Hours:** (3) **Description** Application of current computer programs used in hydrology, hydraulics, sediment transport, groundwater flow, water quality, and water resources engineering and planning.

### **CIVL 7192 - River Engineering**

**Credit Hours:** (3) **Description** River mechanics and principles governing river regulation and improvement, with emphasis on navigation and flood control structures. **PREREQUISITE(S):** CIVL 7185 or permission of instructor.

### **CIVL 7194 - Comp River Hydraulics**

**Credit Hours:** (3) Former: (7149) **Description** Advanced studies in computational open channel hydraulics; major emphasis on unsteady flow simulation in natural rivers, dynamic flood routing, sediment transport and transport of pollutants. **PREREQUISITE(S):** CIVL 7001 and CIVL 7185 or permission of instructor.

### **CIVL 7195 - Groundwater Hydraulics**

**Credit Hours:** (3) *Cross listing* (Same as ESCI 7195)

**Description** Geological contributions to ground water flow; ground water contribution to water demand and conjunctive use; well hydraulics, design and construction, pump selection; determine aquifer properties via field well tests.

### **CIVL 7196 - Urban Drainage**

**Credit Hours:** (3) **Description** Flooding and pollution problems associated with urban areas; application of planning, analysis, and hydraulic design techniques for storm water and erosion control measures. **PREREQUISITE(S):** CIVL 7185 or permission of instructor.

### **CIVL 7197 - Ground Water Qual Cntrl**

**Credit Hours:** (3) **Description** Analysis of ground water quality and contamination problems; study of multispecies chemical reactions and radioactive microbiological decay; techniques for monitoring, and site remediation of ground water problems. **PREREQUISITE(S):** CIVL 7170 or permission of instructor.

### **CIVL 7198 - Computational Methods in Hydraulics and Hydrology**

**Credit Hours:** 3 *Cross listing* ESCI 7198 **Description** Developing mathematical models for applied hydraulic and hydrological engineering problems, and using computational methods to solve those models. ENgineering course fee. **PREREQUISITE(S):** Permission of the instructor.

### **CIVL 7199 - Ecohydraulics and Ecohydrology**

**Credit Hours:** 3 **Description** Hydrogeomorphic, sedimentary and biological processes that create river/floodplain landscapes and determine the communities that inhabit them. Impacts on river systems due to hydropower, flood control, aggregate mining, urbanization, and water abstractions. Concepts of river restoration and environmentally-friendly river engineering. \$45 per credit hour

### **CIVL 7261 - Traffic Flow Theory**

**Credit Hours:** (3) **Description** This course will introduce to student the theories that seek to describe in a precise mathematical way the interactions between the vehicles, their

operators, and the infrastructure. Different models and theories that characterize the flow of highway traffic, signalized or unsignalized intersections will be presented. A number of softwares will be introduced that are currently used in practice and in research to perform traffic impact studies using macroscopic, mesoscopic and microscopic traffic simulation. **PREREQUISITE(S):** CIVL 3161 or equivalent.

### **CIVL 7262 - Freight Demand Modeling**

**Credit Hours:** (3) **Description** Introduce the concepts, modeling and solution methods of freight demand modeling.

### **CIVL 7263 - Intro. to Num. Opt. for Eng \*\***

**Credit Hours:** (3) **Description** Introduce the concepts, modeling and solution methods of unconstrained optimization and linear and integer programs. Topics include: convex analysis and polyhedral sets, unconstrained optimization methods (line search, trust region), the simplex method, duality theory, and decomposition principles.

### **CIVL 7264 - Simulation Modeling**

**Credit Hours:** (3) **Description** Simulation modeling of complex, dynamic and stochastic transportation systems, model building, input and output statistical data analysis, use of simulation for design, evaluation, and improvement of these systems, introduction to simulation software, review of case studies. Three lecture hours a week.

### **CIVL 7265 - Intro to Intermodal Freight**

**Credit Hours:** (3) **Description** An introduction to the real-world environment in which freight transportation systems are planned and operated. Emphasis is placed on the policies, methods and practices utilized in managing freight movements and intermodal transfers. Topics include the overall impact of freight transportation on the economy, individual modal operations, intermodal opportunities.

### **CIVL 7266 - Freight Terms and Distr Facils**

**Credit Hours:** (3) **Description** Introduce state of the art and state of the practice in modeling of operations and management of intermodal freight and distribution facilities. Overview of the advanced in freight terminal and distribution facilities modeling, design, and operation. Special reference to network modeling of facility location, allocation, and routing. Planning, design, and operations or rail/road intermodal terminals, trans-modal facilities, marine container terminals,

intermodal logistics centers, and warehouses.

**PREREQUISITE(S):** Permission of instructor for non-degree-seeking students.

### **CIVL 7267 - Maritime Economics**

**Credit Hours:** (3) **Description** Introduce the concepts and explain how the shipping market is organized. Topics include: Price and freight rates, key players, bulk and liner shipping, ship financing, forecasting, market cycles.

**PREREQUISITE(S):** permission of instructor.

### **CIVL 7268 - Transport Network Flows**

**Credit Hours:** (3) **Description** This course provides an analytical framework for network analysis. The course will discuss algorithms for finding transport network equilibrium flows and the applications that relate to these flows. Topics will include routing algorithms, transportation network design, and several solution algorithms. Mathematical rigor will be stressed and some basic programming will be expected.

### **CIVL 7269 - Quant Meth for Engr Dec Making**

**Credit Hours:** (3) **Description** Overview quantitative methods for engineering decision making using software commonly used by the industry (e.g., Excel). Topics covered include: linear & integer programming, network models, project scheduling, inventory models, queuing models and simulation, multicriteria analysis and forecasting.

### **CIVL 7360 - Transp Econ & Decision Making \*\***

**Credit Hours:** (3) **Description** A comprehensive discussion of decision making using transportation engineering economic analysis. The course involves the use of mathematical tools required to understand the economic analysis principles to aid the transportation decision making process.

### **CIVL 7362 - Port Planning Mgmt & Operation**

**Credit Hours:** (3) **Description** Overview of port planning, management and operations with strong reference to terminal processes and engineering aspects of port development, port functions and management models, port pricing and financing, port security and safety, environmental management and human resources management in ports.

### **CIVL 7363 - Discr. Choice Model for Transp**

**Credit Hours:** (3) **Description** An in-depth study of discrete choice models, data collection, specification, estimation, statistical testing, forecasting, and application. By examining actual case studies of discrete choice methods, students will become familiar with problems of model formulation, estimation, testing, and forecasting. **PREREQUISITE(S):** CIVL 3161 or equivalent.

### **CIVL 7900-7910 - Special Topics in Civil Engineering**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in the online class listings.

### **CIVL 7991 - Projects**

**Credit Hours:** (3) Former: 7991 **Description** Independent investigation of problem selected in consultation with instructor; report required. Nine laboratory hours per week. 9 \$45 per credit hour Course may be repeated.

**PREREQUISITE(S):** Permission of instructor. Standard Letter

### **CIVL 7993 - Project & Report**

**Credit Hours:** (3) **Description** Independent study for students in non-thesis option program. Students demonstrate ability to pursue, complete, and report on project related to Civil Engineering practice. Written and oral report prepared for acceptance by faculty committee. Nine laboratory hours per week. Grades of S/U, or IP will be given.

### **CIVL 7996 - Thesis**

**Credit Hours:** (1-6) **Description** Grades of S, U, or IP will be given.

### **CIVL 8001 - Engineering Analysis**

**Credit Hours:** (3) **Description** (same as CERI 8130). Numerical integration of linear and non-linear differential equations; finite difference methods; systems of linear algebraic equations; applications to engineering problems. **PREREQUISITE(S):** Permission of instructor.

### **CIVL 8002 - Prog Tools for Scits & Engrs**

**Credit Hours:** (3) *Cross listing* (Same as CERI 8102)  
**Description** An introduction to applied programming and programming tools for scientists and engineers at a graduate level with limited background on computer programming.  
**PREREQUISITE(S):** Permission of the instructor.

### **CIVL 8012 - Prob Meth In Engr \*\***

**Credit Hours:** (3) **Description** Concepts and methods of probability and statistics that are essential for modeling engineering problems under conditions of uncertainty; application to practical problems. **PREREQUISITE(S):** CIVL 2103 (formerly 3103) or equivalent.

### **CIVL 8111 - Computatnl Mechncs**

**Credit Hours:** (3) **Description** Advanced mathematical modeling techniques using finite difference, finite element, and boundary element formulations to solve civil engineering problems.

### **CIVL 8112 - Plstc Dsgn Steel Strctr**

**Credit Hours:** (3) Former: (7122) **Description** Plastic analysis and design of steel structures; application to multistory buildings.

### **CIVL 8113 - Prestressed Cncrte Dsgn**

**Credit Hours:** (3) Former: (7121) **Description** Theory of prestressing; design of prestressed concrete beams, slabs, and box girders; statically determinate and indeterminate structures.

### **CIVL 8114 - Elastic Stability**

**Credit Hours:** (3) **Description** Classical theory of buckling of rods, plates, and shells.

### **CIVL 8115 - Plate Shell Struc**

**Credit Hours:** (3) **Description** Analysis of rectangular and circular flat plates; large deflections of plates; variational methods; analysis of shells as surfaces of revolution under symmetric and unsymmetric loading.

### **CIVL 8116 - Structural Dynamics**

**Credit Hours:** (3) **Description** Dynamic analysis of single-degree-of-freedom structures; response to general dynamic

loading; modal analysis of multistory shear buildings; introduction to nonlinear and random vibration.

### **CIVL 8117 - Finite Elem Struc Mech**

**Credit Hours:** (3) **Description** Structural idealization, stiffness properties of elements, structural analysis of element assemblage; plane stress and strain problems; applications to problems of plates and shells; computer solution of large systems.

### **CIVL 8119 - Earthquake Resist Design**

**Credit Hours:** (3) **Description** Earthquake strong motion; response spectrum analysis; seismic design of buildings.

### **CIVL 8125 - Earthquake Ground Motion Simul**

**Credit Hours:** (3) *Cross listing* (same as CERI 8124)  
**Description** Contemporary methods in earthquake ground motion simulation, applications in seismic hazard analysis and engineering, state-of-the-art simulation software. **PREREQUISITE(S):** Permission of the instructor.

### **CIVL 8126 - Data Analysis in Geophysics**

**Credit Hours:** (3) *Cross listing* (Same as CERI 8104)  
**Description** Through project-based work, students will develop programming skills using high-level software tools commonly used in geophysics research, including the Unix environment, Python, MATLAB, Seismic Analysis Code, AWK, Shell Scripts, and Generic Mapping Tools.  
**PREREQUISITE(S):** Permission of instructor.

### **CIVL 8127 - Signal Processing Earth Sci**

**Credit Hours:** (3) *Cross listing* (Same as CERI 8106)  
**Description** Fundamentals of digital processing of geophysical data, both purely mathematical and applied aspects with attention to digital seismograms and gravity and magnetic data. **PREREQUISITE(S):** MATH 1920 or equivalent.

### **CIVL 8128 - Inverse Methods in Geophysics**

**Credit Hours:** (3) *Cross listing* (Same as CERI 8260)  
**Description** Methods for parameter estimation in earth sciences, including review of linear algebra and vector spaces,

introduction to probability and statistics, and solution of inverse linear and nonlinear problems; students will solve an inverse problem in their field of interest.

**PREREQUISITE(S):** Linear Algebra (MATH 3242 or equivalent) or permission of the instructor.

### **CIVL 8132 - Advanced Soil Mech**

**Credit Hours:** (3) **Description** Stresses in soil masses; pore-water stresses; consolidation and settlement; shear strength; applications to problem solution.

### **CIVL 8133 - Slopes and Embankments**

**Credit Hours:** (3) **Description** Analysis, design, and construction of earth dams, levees, embankments and slopes; soil stabilization; seepage, drainage, and flow nets.

**PREREQUISITE(S):** CIVL 4152/CIVL 6152 or permission of instructor.

### **CIVL 8135 - Soil Dynamics**

**Credit Hours:** (3) **Description** Theory and measurements of dynamic properties of soils and their applications in seismic hazards assessments, earthquake engineering design, and geophysics studies.

### **CIVL 8136 - Probabilistic and Earthquake Hazards Analysis**

**Credit Hours:** 3 *Cross listing* CERI 8204 **Description** Fundamentals of basic probability, seismicity analysis, ground motion attenuation and site effects, seismic hazard analysis, and uncertainty analysis; students will perform a probabilistic seismic hazard analysis for a region of their interest. Engineering Course Fee **PREREQUISITE(S):** Permission of the instructor.

### **CIVL 8137 - Geotechnical Earthquake**

**Credit Hours:** (3) **Description** Earthquake magnitude and intensity, seismic hazard evaluation using deterministic and probabilistic approaches, site response analyses and ground motion amplification, liquefaction, and response to earth structures.

### **CIVL 8138 - Shallow and Deep Foundations**

**Credit Hours:** (3) **Description** Analysis and design of footing, mat, pile, and drilled-shaft foundations. Three lecture

hours a week. **PREREQUISITE(S):** CIVL 4152/CIVL 6152 or permission of instructor.

### **CIVL 8139 - Earth Retaining Structures**

**Credit Hours:** (3) **Description** Types of earth retaining structures. Retaining wall selection. Lateral earth pressure theories. Design of conventional, MSE, soil-nailed, and tied-back walls. Three lecture hours a week. **PREREQUISITE(S):** CIVL 4152/CIVL 6152 or permission of instructor.

### **CIVL 8141 - Water Trt Plant Dsgn**

**Credit Hours:** (3) **Description** Design of a water treatment plant; application of fundamental water treatment theory; evaluation of alternatives; selection and design of optimum alternative. **PREREQUISITE(S):** CIVL 4143/CIVL 6143 or permission of instructor.

### **CIVL 8142 - Wastewater Trt Plnt Dsgn**

**Credit Hours:** (3) **Description** Design of a wastewater treatment plant; application of fundamental wastewater treatment theory; evaluation of alternative; selection and design of optimum alternative. **PREREQUISITE(S):** CIVL 4144/CIVL 6144 or permission of instructor.

### **CIVL 8143 - Solid Waste Mgmt**

**Credit Hours:** (3) **Description** Systems approach to solid waste generation, characterization, collection, transportation, and disposal; emphasizes both domestic and industrial wastes.

### **CIVL 8144 - Residuals Mgmt**

**Credit Hours:** (3) **Description** Systems approach to unique solid wastes (flammable industrial, sewage sludge, etc.), as well as resource recovery and energy conversion as disposal practices.

### **CIVL 8145 - Adv Biological Treatmnt**

**Credit Hours:** (3) **Description** In-depth study of biokinetics applicable to waste management; model evaluations; hazardous and non-hazardous wastes. **PREREQUISITE(S):** CIVL 4144/CIVL 6144 or permission of instructor.

### **CIVL 8146 - Adv Phys/Chem Treatmnt**

**Credit Hours:** (3) **Description** An in-depth analysis of theory and practice of advanced water and wastewater treatment processes; emphasis on adsorption processes, ion exchange, membrane processes, chemical oxidation, land treatment, nutrient removal, and sludge treatment and disposal.

**PREREQUISITE(S):** CIVL 4143/CIVL 6143 or permission of instructor.

### **CIVL 8147 - Hazardous Waste Mgmt**

**Credit Hours:** (3) **Description** Design of hazardous waste management systems; application of current design theories; review of regulatory requirements.

### **CIVL 8154 - Indust Wastewater Treat**

**Credit Hours:** (3) **Description** In-plant control measures and end-of-pipe treatment technologies for reducing conventional and toxic industrial pollutant discharges; emphasis on water conservation, wastewater recycle/reuse, and optimum treatment strategies for waste streams from major industries.

### **CIVL 8162 - Transportation Sys Eval**

**Credit Hours:** (3) **Description** Transportation problems, goals, and objectives; evaluation and decision-making techniques; measurement of variables and intangibles in transportation decisions, cost allocation and benefit transfer, risk and uncertainty; financing and implementation; differential impacts of transportation improvements.

### **CIVL 8164 - Urban Transport Engr**

**Credit Hours:** (3) **Description** A review of the transportation problem as it relates to development patterns in American cities. The theory and application to engineering and socioeconomic factors directed toward the formulation of models for conducting transportation studies.

### **CIVL 8165 - Geom Dsgn Trnsprtn Syst**

**Credit Hours:** (3) **Description** Design of streets and highways with emphasis on the factors and features controlling safe and efficient vehicle operation; applications of design concepts to urban and rural systems, intersections, interchanges, safety appurtenances, and parking facilities.

**PREREQUISITE(S):** CIVL 4164/CIVL 6164 or permission of instructor.

### **CIVL 8166 - Design Hgwy Airprt Pvmt**

**Credit Hours:** (3) **Description** Design practices, materials, and testing of flexible and rigid pavements.

### **CIVL 8168 - Traffic Engr Operations**

**Credit Hours:** (3) **Description** Theory of traffic control: traffic laws and ordinances; application of traffic control devices; analysis and design of traffic signal systems, parking control and design pedestrian control; one-way and unbalanced lane operation, roadway illumination; selected operational problems. **PREREQUISITE(S):** CIVL 4162/CIVL 6162 or permission of instructor.

### **CIVL 8169 - Mass Transit Systems**

**Credit Hours:** (3) **Description** Operational analysis of equipment and facility design and service characteristics of urban mass transit systems; analysis of capacity, speed, accessibility, terminal operations; study of financing, decision-making, administration and marketing policies and practices, trends in future transit technology.

### **CIVL 8170 - GW Cont Fate/Transport**

**Credit Hours:** (3) **Description** Elements of ground water contamination and migration; study of various contaminant transport modeling techniques; analysis of numerical dispersion and stability criteria; chemical reactions; discussion of analytical solutions.

### **CIVL 8177 - Quantitative Hydrogeol**

**Credit Hours:** (3) **Description** Analysis of hydrogeological parameters; geostatistical techniques for processing spatial data for use in hydrogeological analyses. Engineering Course Fee **PREREQUISITE(S):** CIVL 7012/8012 or permission of instructor.

### **CIVL 8181 - Statistical Hydrol Modl**

**Credit Hours:** (3) **Description** Current statistical techniques used in stochastic, deterministic, and parametric hydrologic models; emphasis on probability and frequency analysis; time series analysis and synthesis; sensitivity analysis. Engineering Course Fee

### **CIVL 8185 - Hydraul Open Channels**

**Credit Hours:** (3) Former: (8148) **Description** Phenomena accompanying flow of water in open channels, uniform and varied flow, critical conditions, backwater curves or water

surface profiles, hydraulic jumps, hydraulic drops, and various design applications.

### **CIVL 8186 - Hydrological Processes**

**Credit Hours:** 3 **Description** Physically-based description of hydrologically-relevant energy and water fluxes, and of near-surface hydrological processes; applications to water budgets and rainfall-runoff modelling. Standard with IP

### **CIVL 8191 - Computer Appl Water Res**

**Credit Hours:** (3) **Description** Application of current computer programs used in hydrology, hydraulics, sediment transport, groundwater flow, water quality, and water resources engineering and planning.

### **CIVL 8192 - River Engineering**

**Credit Hours:** (3) **Description** River mechanics and principles governing river regulation and improvement, with emphasis on navigation and flood control structures. **PREREQUISITE(S):** CIVL 7185/CIVL 8185 or permission of instructor.

### **CIVL 8194 - Comp River Hydraulics**

**Credit Hours:** (3) Former: (8149) **Description** Advanced studies in computational open channel hydraulics; major emphasis on unsteady flow simulation in natural rivers, dynamic flood routing, sediment transport and transport of pollutants. **PREREQUISITE(S):** CIVL 7001/CIVL 8001 and CIVL 7185/CIVL 8185 or permission of instructor.

### **CIVL 8195 - Groundwater Hydraulics**

**Credit Hours:** (3) *Cross listing* (Same as ESCI 7195) **Description** Geological contributions to ground water flow; ground water contribution to water demand and conjunctive use; well hydraulics, design and construction, pump selection; determine aquifer properties via field well tests.

### **CIVL 8196 - Urban Drainage**

**Credit Hours:** (3) **Description** Flooding and pollution problems associated with urban areas; application of planning, analysis, and hydraulic design techniques for storm water and erosion control measures. **PREREQUISITE(S):** CIVL 7185/CIVL 8185 or permission of instructor.

### **CIVL 8197 - Ground Water Qual Cntrl**

**Credit Hours:** (3) **Description** Analysis of ground water quality and contamination problems; study of multispecies chemical reactions and radioactive microbiological decay; techniques for monitoring, and site remediation of ground water problems. **PREREQUISITE(S):** CIVL 7170/CIVL 8170 or permission of instructor.

### **CIVL 8198 - Computational Methods in Hydraulics and Hydrology**

**Credit Hours:** 3 *Cross listing* ESCI 8198 **Description** Developing mathematical models for applied hydraulic and hydrological engineering problems, and using computational methods to solve those models. Engineering Course Fee **PREREQUISITE(S):** Permission of instructor.

### **CIVL 8199 - Ecohydraulics and Ecohydrology**

**Credit Hours:** 3 **Description** Hydrogeomorphic, sedimentary and biological processes that create river/floodplain landscapes and determine the communities that inhabit them. Impacts on river systems due to hydropower, flood control, aggregate mining, urbanization, and water abstractions. Concepts of river restoration and environmentally-friendly river engineering. \$45 per credit hour

### **CIVL 8261 - Traffic Flow Theory**

**Credit Hours:** (3) **Description** This course will introduce to student the theories that seek to describe in a precise mathematical way the interactions between the vehicles, their operators, and the infrastructure. Different models and theories that characterize the flow of highway traffic, signalized or unsignalized intersections will be presented. A number of softwares will be introduced that are currently used in practice and in research to perform traffic impact studies using macroscopic, mesoscopic and microscopic traffic simulation. **PREREQUISITE(S):** CIVL 3161 or equivalent.

### **CIVL 8262 - Freight Demand Modeling**

**Credit Hours:** (3) **Description** Introduce the concepts, modeling and solution methods of freight demand modeling.

### **CIVL 8263 - Intro. to Num. Opt. for Eng \*\***



**Credit Hours:** (3) **Description** Introduce the concepts, modeling and solution methods of unconstrained optimization and linear and integer programs. Topics include: convex analysis and polyhedral sets, unconstrained optimization methods (line search, trust region), the simplex method, duality theory, and decomposition principles.

### **CIVL 8264 - Simulation Modeling**

**Credit Hours:** (3) **Description** Simulation modeling of complex, dynamic and stochastic transportation systems, model building, input and output statistical data analysis, use of simulation for design, evaluation, and improvement of these systems, introduction to simulation software, review of case studies.

### **CIVL 8265 - Intro to Intermodal Freight**

**Credit Hours:** (3) **Description** An introduction to the real-world environment in which freight transportation systems are planned and operated. Emphasis is placed on the policies, methods and practices utilized in managing freight movements and intermodal transfers. Topics include the overall impact of freight transportation on the economy, individual modal operations, intermodal opportunities.

### **CIVL 8266 - Freight Terms and Distr Facils**

**Credit Hours:** (3) **Description** Introduce state of the art and state of the practice in modeling of operations and management of intermodal freight and distribution facilities. Overview of the advanced in freight terminal and distribution facilities modeling, design, and operation. Special reference to network modeling of facility location, allocation, and routing. Planning, design, and operations or rail/road intermodal terminals, trans-modal facilities, marine container terminals, intermodal logistics centers, and warehouses.

**PREREQUISITE(S):** Permission of instructor for non-degree-seeking students.

### **CIVL 8267 - Maritime Economics**

**Credit Hours:** (3) **Description** Introduce the concepts and explain how the shipping market is organized. Topics include: Price and freight rates, key players, bulk and liner shipping, ship financing, forecasting, market cycles.

**PREREQUISITE(S):** Permission of the instructor

### **CIVL 8268 - Transport Network Flows**

**Credit Hours:** (3) **Description** This course provides an analytical framework for network analysis. The course will discuss algorithms for finding transport network equilibrium flows and the applications that relate to these flows. Topics will include routing algorithms, transportation network design, and several solution algorithms. Mathematical rigor will be stressed and some basic programming will be expected.

### **CIVL 8269 - Quant Meth for Engr Dec Making**

**Credit Hours:** (3) **Description** Overview quantitative methods for engineering decision making using software commonly used by the industry (e.g., Excel). Topics covered include: linear & integer programming, network models, project scheduling, inventory models, queuing models and simulation, multicriteria analysis and forecasting.

### **CIVL 8360 - Transp Econ & Decision Making \*\***

**Credit Hours:** (3) **Description** A comprehensive discussion of decision making using transportation engineering economic analysis. The course involves the use of mathematical tools required to understand the economic analysis principles to aid the transportation decision making process.

### **CIVL 8362 - Port Planning Mgmt & Operation**

**Credit Hours:** (3) **Description** Overview of port planning, management and operations with strong reference to terminal processes and engineering aspects of port development, port functions and management models, port pricing and financing, port security and safety, environmental management and human resources management in ports.

### **CIVL 8363 - Discr. Choice Model for Transp**

**Credit Hours:** (3) **Description** An in-depth study of discrete choice models, data collection, specification, estimation, statistical testing, forecasting, and application. By examining actual case studies of discrete choice methods, students will become familiar with problems of model formulation, estimation, testing, and forecasting. **PREREQUISITE(S):** CIVL 3161 or equivalent.

### **CIVL 8900-8910 - Special Topics in Civil Engineering**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in the online class listings.

### **CIVL 8991 - Projects**

**Credit Hours:** (3) Former: 8991 **Description** Independent investigation of problem selected in consultation with instructor; report required. Nine laboratory hours per week. 9 \$45 per credit hour Course may be repeated.

**PREREQUISITE(S):** Permission of instructor.

### **CIVL 8993 - Project & Report**

**Credit Hours:** (3) **Description** Independent study for students in non-thesis option program. Students demonstrate ability to pursue, complete, and report on project related to Civil Engineering practice. Written and oral report prepared for acceptance by faculty committee. Nine laboratory hours per week. Grades of A-F, or IP will be given. Nine laboratory hours per week.

### **CIVL 9000 - Dissertation**

**Credit Hours:** (1-12) Grades of S, U, or IP will be given.

## **College of Professional and Liberal Studies**

### **AVIA 7110 - Foundations AV Human Factors \*\***

**Credit Hours:** (3) **Description** This course includes elements of pilot performance, human factors in aircraft design, and vehicles and systems as they relate to the human-machine interface. Topics also include flight discipline, pilot proficiency, team-environment-risk, situational awareness, and decision making.

### **AVIA 7111 - Cognitive Ergonomics in AV**

**Credit Hours:** (2) **Description** This course introduces students to the basic concepts of human information processing, and to illustrate its application in the applied aeronautical context. Students are then made familiar with the concepts of workload and situation awareness, associated measurement techniques and their importance in all aspects of system design and evaluation. Students will also be exposed to the fundamental aspects of data collection and analysis.

### **AVIA 7113 - Judgment & Decision Making AV \*\***

**Credit Hours:** (2) **Description** This course will introduce students to the major schools of thought in the study of decision making and the processes for improving aviation decision making. Students are then presented with information on the nature of error, its root causes and methods by which it may be mitigated. These concepts will be illustrated within an aviation context where applicable.

### **AVIA 7115 - Selection & Beh Health in AV \*\***

**Credit Hours:** (2) **Description** This course will introduce students to the psychology of individual differences, in particular the constructs of personality and intelligence and their measurement. The areas of stress, psychosocial and environment stressors within and aviation environment will be discussed. The effects of such stressors on human performance will be addressed.

### **AVIA 7117 - Flight Deck Ergonomics \*\***

**Credit Hours:** (2) **Description** This course will provide an introduction to the human factors issues linked to flight deck design. The module will provide students with an understanding of the human factors basis of the design of displays and controls, the use of automation, human computer interactions on the commercial flight deck.

### **AVIA 7119 - Training and Simulation \*\***

**Credit Hours:** (2) **Description** This course will provide students with an overview of the training life-cycle, training methods and media, and the evaluation of training. The application of the concepts will be illustrated in the applied aeronautical context as appropriate. The role of simulation in an aviation training context will also be discussed.

### **AVIA 7121 - HF Techniques and Methods \*\***

**Credit Hours:** (2) **Description** This course will introduce the principles of Crew/Team Resource Management. It will include the scientific literature behind non-technical skills (e.g. decision making, communication, leadership/team working, situation awareness and fatigue management) relevant in real-world modern environments. Students will also be introduced to the process of identifying, training and assessing Non-technical Skills in the applied aeronautical context.

### **AVIA 7998 - Comprehensive Exam**

**Credit Hours:** (0) **Description** The comprehensive exam is completed in the final semester of the program in which the student expects to graduate. A grade of "pass" is required to graduate. The comprehensive exam is a test of the student's comprehension of the body of knowledge for the aviation discipline. Grades of S/U, or IP will be given.

### **UNIV 6800-6809 - Special Topics in College of Professional & Liberal Studies**

**Credit Hours:** 3 **Description** Topics vary by semester, see online class schedule listing.

### **UNIV 7000 - Fndtns Liberal Studies \*\***

**Credit Hours:** (3) **Description** Analytical introduction to graduate liberal studies and its theoretical framework; readings in and concerning the humanities, social sciences, and natural sciences.

### **UNIV 7002 - Seminar in University Studies**

**Credit Hours:** (3) **Description** Analysis of contemporary issues and trends in various topics. Course may be repeated for a maximum of 6 credits.

### **UNIV 7003 - 7005 - Special Topics**

**Credit Hours:** (3) **Description** Selected topics course based on current as well as emerging issues and/or trends of topical interest.

### **UNIV 7100 - Rsrch/Intrdiscipl Study \*\***

**Credit Hours:** (3) **Description** Methods of inquiry and research appropriate to interdisciplinary studies.

### **UNIV 7110 - Internship**

**Credit Hours:** (1-6) **Description** Experiential learning allowing students the opportunity to supplement academic instruction and demonstrate application as well as development of knowledge and skills in a practical setting related to student's educational objectives.

### **UNIV 7111 - Data-Based Decision-making \*\***

**Credit Hours:** (3) **Description** This course will examine how you interpret research data and turn it into useful or meaningful information. Students will study the use of business intelligence to prepare and present useful information in supporting conclusions and decision-making.

### **UNIV 7115 - Experiential Learning Credit**

**Credit Hours:** (1-9) **Description** A systematic process for evaluating and credentialing graduate-level learning gained in a variety of contexts. Students will provide documentation of graduate-level knowledge and skills garnered in non-traditional settings to expert faculty reviewers.

### **UNIV 7200 - Liberal Studies Sem \*\***

**Credit Hours:** (3) **Description** Interdisciplinary examination of major issue, historical period, theme. Subject matter will change from semester to semester.

### **UNIV 7300 - Prof Issues & Ethics**

**Credit Hours:** (3) **Description** Classical approaches to ethics presented with their application to decision points confronted in various professions, as well as analysis of issues of diversity and moral responsibility in professional practice.

### **UNIV 7350 - Globalization&Professns**

**Credit Hours:** (3) **Description** Examines relationship between globalization and the professions.

### **UNIV 7700 - Graduate Student Internships**

**Credit Hours:** (0)

### **UNIV 7796 - Independent Study**

**Credit Hours:** (1-3) **Description** Research into interdisciplinary area of study supportive of individualized MALS program. May be repeated once.

### **UNIV 7997 - Special Project \*\***

**Credit Hours:** (3) **Description** Supervised research based upon knowledge and skills learned in MALS program. Creative or performance component acceptable.

### **UNIV 7998 - Professional Project**

**Credit Hours:** (3) **Description** Supervised research that serves as the integrative culmination for the Master of Professional Studies student.

### **UNIV 8000 - Foundations of Liberal Studies** \*\*

**Credit Hours:** (3) **Description** Analytical introduction to graduate liberal studies and its theoretical framework; readings in and concerning the humanities, social sciences, and natural sciences. NOTE: Must be taken during the first semester in the DLS program. **PREREQUISITE(S):** Approval of DLS program coordinator.

### **UNIV 8100 - Rsrch/Intrdiscipl Study** \*\*

**Credit Hours:** (3) **Description** Methods of inquiry and research appropriate to interdisciplinary studies.  
**PREREQUISITE(S):** Approval of DLS major advisor and DLS program coordinator.

### **UNIV 8111 - Data Based Decision Making** \*\*

**Credit Hours:** (3) *Cross listing* (UNIV 7111). **Description** This course will examine how to interpret research data and turn it into useful or meaningful information. Students will study the use of business intelligence to prepare and present useful information in supporting conclusions and decision-making.

### **UNIV 8200 - Liberal Studies Seminar** \*\*

**Credit Hours:** (3) **Description** Interdisciplinary examination of major issue, historical period, theme. Subject matter will change from semester to semester. **PREREQUISITE(S):** Admission to DLS program or permission of instructor and DLS program coordinator.

### **UNIV 8990 - Prospectus** \*\*

**Credit Hours:** (3) **Description** This course is designed to help the doctoral student prepare a prospectus for either their dissertation or community project. The student will prepare an introduction with a statement of the problem to be the core of the dissertation or project. Then, the student will do a literature review and develop a methodology for implementing the project or dissertation. **PREREQUISITE(S)** or **COREQUISITE(S):** Student should be in his/her last semester of coursework.

### **UNIV 8995 - Capstone Project** \*\*

**Credit Hours:** (1-9) **Description** Over the course of one or more semesters, students must earn at least six (6) capstone project hours in order to qualify for the Doctor of Liberal Studies (DLS) degree. This course is directed by the student's capstone project chair. **PREREQUISITE(S):** UNIV 8990 - Prospectus \*\*. Grades of S, U, or IP will be given.

### **UNIV 9000 - Dissertation** \*\*

**Credit Hours:** (1-9) **Description** Over the course of one or more semesters, students must earn at least 6 dissertation hours in order to qualify for the Doctor of Liberal Studies (DLS) degree. This course is directed by the student's dissertation chair. Students are expected to maintain open communication with their dissertation chair, at a minimum this would be emailing their chair every third week with an update on progress. Each student's dissertation will follow the topic and methodology outlined in their prospectus and approved by their committee. **PREREQUISITE(S)** or **COREQUISITE(S):** Student should be enrolled in this course through degree completion. Grades of S, U, or IP will be given.

## **Communication**

### **COMM 6011 - Communctn In Orgnztns**

**Credit Hours:** (3) **Description** Communication systems and problems in contemporary organizations with emphasis on the role of communication in corporate culture and in organizational change.

### **COMM 6013 - Political Communication**

**Credit Hours:** (3) **Description** Investigation of various forms of political communication; texts drawn primarily from current political disputes in the US; focus on improving basic skills of critical thinking and writing about civic life. Grades of A-F, or IP will be given.

### **COMM 6014 - Communication in Internet**

**Credit Hours:** (3) **Description** Research and theories examining role of the Internet and new technologies in everyday interaction; interpersonal and group communication, language change, online communities and social networks, identity and self-presentation online.

### **COMM 6015 - Health Literacy**

**Credit Hours:** (3) **Description** Development of health literacy as an area of concern in healthcare including

patient/provider interactions, public health campaigns, health education, healthcare reform, and health insurance.

**PREREQUISITE(S):** Permission of the instructor.

### **COMM 6016 - Public Health Campaigns**

**Credit Hours:** (3) **Description** Examination of the fundamentals of public health communication as well as the latest public health communication innovations, tools, technologies, research and strategies. **PREREQUISITE:** COMM 3012, or permission of instructor.

### **COMM 6210-6219 - Special Topics in Communication Studies**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in the online class listings May be repeated for maximum of 9 hours when topic varies.

### **COMM 6220-6229 - Special Topics in Film**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in online class listings May be repeated for maximum of 9 hours when topic varies.

### **COMM 6340 - Listening**

**Credit Hours:** (3) **Description** Exploration of communication theory and practice from the perspective of listening; emphasis on philosophical, practical, and personal dimensions of listening as an art of being as well as a mode of doing.

### **COMM 6341 - Interprsnl Communicatn**

**Credit Hours:** (3) **Description** Theory, research, and practice regarding dyadic communication.

### **COMM 6342 - Small Group Communicatn**

**Credit Hours:** (3) **Description** Advanced study of group communication theory emphasizing group membership, member perceptions, group development, group process, and group outcomes. Grades of A-F, or IP will be given.

### **COMM 6360 - American Eloquence**

**Credit Hours:** (3) **Description** Examination of notable public discourse from founding of the republic through the twentieth century; religious and secular foundations of American

rhetoric; tensions of inclusion and exclusion in development of national self-understanding.

### **COMM 6363 - Dialogue**

**Credit Hours:** (3) **Description** Theoretical, philosophical, and practical exploration of dialogic communication and relations.

### **COMM 6364 - Gender and Public Discourse**

**Credit Hours:** (3) **Description** History of gender topics in U.S. public discourse. The course covers gender and rhetorical theory analyzing the social and cultural significance gendered voices and topics have played and continue to play in US history. Focus is given to various 19th, 20th and 21st century issues. Grades of A-F will be given.

### **COMM 6365 - Place/Community/Comm**

**Credit Hours:** (3) **Description** Explores interrelationships among human interaction, created places, and the natural world; emphasizes communication environment, broadly conceived, and its effects on community.

### **COMM 6373 - Interracial Comm**

**Credit Hours:** (3) **Description** The social problems encountered in communication between blacks and whites; readings, discussion, and field study on how prejudice, stereotypes, and self-concepts can affect communication; exploration of rhetorical methods to minimize these problems.

### **COMM 6375 - Intercultrl Communicatn**

**Credit Hours:** (3) **Description** Special problems encountered in communication between people of different cultural backgrounds; focus on understanding communicative interaction between and among people with different national/cultural backgrounds and functioning more effectively in multicultural settings. Grades of A-F, or IP will be given.

### **COMM 6380 - Communication/Conflict**

**Credit Hours:** (3) **Description** Theories and methods of conflict management and resolution, focusing on practical communication skills; emphasis on concepts of perception, listening, and peacemaking.

### **COMM 6400 - Contemplative Communication**

**Credit Hours:** (3) **Description** Non-analytical approach to communication theory and practice; holistic-communal perspective of relational experience; benefits of silence, stillness and solitude are interrelated with the values of openness, receptiveness and responsiveness.

### **COMM 6802 - Internship**

**Credit Hours:** (1-6) **Description** Field studies in communication; supervised practical work with government institutions, private business, film company, or broadcast and electronic media firm; written analysis of experience required. May be repeated for a maximum of 6 semester hours. May be repeated for a maximum of 6 semester hours

**PREREQUISITE(S):** Permission of Instructor. Grades of S,U, or I will be given.

### **COMM 6811 - Media 2.0**

**Credit Hours:** (3) **Description** Examination of long tail phenomenon and other theories behind convergent media; people and organizations producing and distributing their work on the Internet and other alternative channels; exploration of how these new distribution forms challenges and assumptions about how mass media should and does work. Grades of A-F, or IP will be given.

### **COMM 6822 - Audio Prdctn Film/Video**

**Credit Hours:** (3) **Description** Intermediate principles and practices of audio (recording, editing, mixing, and design) with emphasis on film and video production. Standard Letter

### **COMM 6824 - Cinematography**

**Credit Hours:** (3) Former: 6824 **Description** Art of visual interpretation with concentration in theory, camerawork, and techniques of lighting. Hands on experience with cameras and lighting equipment. **PREREQUISITE(S):** Permission of instructor. Standard Letter

### **COMM 6825 - Editing/Post Production**

**Credit Hours:** (3) **Description** Aesthetics of continuity development in variety of editing styles; editing techniques and post-production procedures. **PREREQUISITE(S):** Minimum grade of "C" in COMM 3824 or permission of instructor. Standard Letter

### **COMM 6841 - Television Workshop**

**Credit Hours:** (4) **Description** Production of television programming for local cablecasting. May be repeated for a maximum of 8 semester hours; repetition will not result in change of any grade previously given. Standard Letter

### **COMM 6842 - TV Studio Production II**

**Credit Hours:** (4) **Description** Advanced training in TV studio/multiple camera techniques; extensive production work. Standard Letter

### **COMM 6850 - Film History I**

**Credit Hours:** (3) Former: (6852) **Description** (6852). Historical survey of motion pictures from medium's pre-history to 1940 with emphasis on narrative film.

### **COMM 6851 - Film History II**

**Credit Hours:** (3) **Description** Historical survey of major movements, genres, and themes in narrative film from 1940 to 1980.

### **COMM 6853 - Documentary Form Film**

**Credit Hours:** (3) **Description** Development of non-fiction film as rhetorical and expressive form; analysis of individual films, genres, and filmmakers.

### **COMM 6854 - Documentary Form/Broadcasting**

**Credit Hours:** (3) **Description** History, theory, and criticism of non-fiction broadcasting, including docudrama and television documentaries.

### **COMM 6856 - Gender and Film**

**Credit Hours:** (3) **Description** Examines how gender, and consequently race and sexuality, are represented in film. Specific attention is given to feminist approaches in film studies.

### **COMM 6858 - Contemporary Cinema**

**Credit Hours:** (3) **Description** Major themes and styles in international and American narrative film from 1980 to present.

### COMM 6859 - Monster Films

**Credit Hours:** (3) **Description** Survey of classic and contemporary monster films exploring monstrosity as a social and cultural category for organizing, classifying, and managing change.

### COMM 6891 - Directing for Film

**Credit Hours:** (3) Former: 6891 **Description** Research and script preparation; budgeting and production management; working with actors and crew. **PREREQUISITE(S):** Permission of instructor. Standard Letter

### COMM 6893 - Producing for Film

**Credit Hours:** 3 **Description** The goal of this course is to acquaint the student with the overall film/video making process through the lens of the producer - how to take a film idea from conception to completion; examine in depth the world of the producer as s/he finds and sells a concept, budgets, schedules, assembles a crew, oversees post-production, and markets his/her project; explore how the producer operates in the "Hollywood" system – from dealing with agents and managers to finding talent and developing screenplays; hands-on approach the learning essential tools of an aspiring executive/producer in Hollywood. Standard Letter

### COMM 6894 - Community Action Film

**Credit Hours:** 3 **Description** Students work together to make short films that promote the work of not-for-profit organizations that benefit the community. Production work outside of class time will be required. Fee Broadcast and Film. **PREREQUISITE(S):** COMM 3824 or permission of instructor. Standard Letter

### COMM 6960 - Documentary Writing

**Credit Hours:** (3) **Description** Writing for nonfiction media.

### COMM 6970 - Screenwriting

**Credit Hours:** (3) **Description** Writing for fiction film and television. Basic dramatic theory, narrative structure, characterization, dialogue, adaptation and unique demands of audio/visual media.

### COMM 7010 - Writ./Comm Cent. Theory/Meth

**Credit Hours:** (3) *Cross listing* ENGL 7010 **Description** Study of writing and communication center theory and methodology. Prepares graduate students for professional work as writing and communication center consultants and administrators.

### COMM 7012 - Seminar Health Comm \*\*

**Credit Hours:** (3) **Description** Examines current issues in health communication research, including patient-provider relationships, new technologies and health promotion, and health organizations.

### COMM 7013 - Sem Political Comm

**Credit Hours:** (3) **Description** Survey of critical and rhetorical theories of contemporary US political discourse; examines relationships among rhetoric, culture, and state power; assignments lead toward preparation of manuscript for eventual publication. May be repeated for a maximum of 9 hours credit.

### COMM 7014 - Public Health Communication

**Credit Hours:** (3) *Cross listing* (same as PUBH 7014-8014). **Description** Explores communication studies theory and method that can be used to promote positive change in health concerns in public health care communication, including disseminating health information, health inequities, and health literacy. Grades of A-F, or IP will be given.

### COMM 7017 - Introduction to Graduate Studies in Communication

**Credit Hours:** 3 **Description** This course is designed as an introduction to the norms and expectations of the graduate training in communication. Focusing on the major areas of academic assessment (teaching, research, and service), the course introduces students to various communication sub-fields with a particular emphasis on the department expertise; helps them articulate their teaching philosophy; teaches fundamentals of research such as developing research agenda/finding publication venues; and begins preparations for the academic and non-academic job market. Students will also be introduced to some of the main methodological and theoretical approaches used in the discipline.

**COMM 7110 - Leadership/Communication**

**Credit Hours:** (3)

**COMM 7210-7219 - Special Topics in Communication Studies**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in online class listings.

**COMM 7321 - Communication Theory**

**Credit Hours:** (3) **Description** Advances studies of theories, models, and approaches to the study of communication.

**COMM 7322 - Persuasion & Influence**

**Credit Hours:** (3) *Cross listing* no **Description** Examination of how people use communication to alter attitudes and behaviors of others in public and face-to-face settings; covers various social-scientific theories and research areas of persuasion and interpersonal influence.

**COMM 7331 - Topics in Communication Theory**

**Credit Hours:** (3) **Description** Specific topics, issues, and research in communication theory. May be repeated for a maximum of 9 hours credit.

**COMM 7332 - Topics in Comm Methods**

**Credit Hours:** (3) **Description** Examination of particular methodologies in communication research. Content will vary in response to current issues in the field. May be repeated for a maximum of 9 hours.

**COMM 7345 - Health Literacy**

**Credit Hours:** (3) *Cross listing* (Same as PUBH 7345-PUBH 8345) **Description** This course introduces students to health literacy models and research from a health communication perspective. We explore the impact of health literacy on access to care, vulnerable populations, management of chronic illness, mental health, healthcare costs, caregiver and stakeholder health literacy, and other current issues.

**COMM 7350 - Rhetorical Theory**

**Credit Hours:** (3) *Cross listing* (Same as ENGL 7350-ENGL 8350) **Description** (Same as ENGL 7350-8350). History of rhetoric from the sophists through the present; may include reading from Isocrates, Plato, Aristotle, Cicero, Augustine, Erasmus, Ramus, Campbell, Blair, John Q. Adams, and others.

**COMM 7351 - African-American Public Address**

**Credit Hours:** 3 **Description** Examines the African American rhetorical tradition from classical times up to the present. Engages in a close reading of texts and draws upon the practical tools of rhetorical criticism to examine, understand, and analyze the discourse of African Americans throughout American history. Standard Letter

**COMM 7352 - Rhetoric, Race, Religion**

**Credit Hours:** 3 **Description** Examines the intersection of rhetoric race and religion. Using rhetoric as a method illustrates how rhetorical approaches to religion can contribute to a deeper and more meaningful understanding of both religion and race. Standard Letter

**COMM 7353 - Topics in Prophetic Rhetoric**

**Credit Hours:** 3 **Description** Specific topics, issues, and research in prophetic rhetoric. Topics will vary each time offered. May be repeated for a maximum of 9 hours credit. Standard Letter

**COMM 7354 - Topics in Rhetoric of Health, Medicine and Science**

**Credit Hours:** 3 **Description** Specific topics, issues, and research in rhetoric of health, science, and medicine. Topics will vary each time offered. May be repeated for a maximum of 9 hours credit. Standard Letter

**COMM 7355 - Topics in Critical Cultural Studies**

**Credit Hours:** 3 **Description** Specific topics, issues, and research in critical cultural studies. Topics will vary each time offered. repeatable for up to 9 hours Standard Letter

**COMM 7356 - Feminist Media Studies**



**Credit Hours:** 3 **Description** Surveys feminist media studies from early and pre-feminist work, paying particular attention to how feminist media studies has intersected with anti-racist, queer, and class-based perspectives. Standard Letter

### COMM 7357 - Pedagogical Rhetoric

**Credit Hours:** 3 **Description** Surveys the dominant means and ends of rhetorical instruction since antiquity. Assignments and course readings foreground the practice of pedagogy in assessing the history, scope, and future of rhetoric study. Standard Letter

### COMM 7358 - Critical Regionalism and Rhetoric

**Credit Hours:** 3 **Description** Focuses on how regionalism is created rhetorically as a strategic identity developing insider and outsider status in a variety of contexts. Specific attention will be given to the tensions between regional identity and the crossing of borders. Regional culture will be discussed in terms of religion, politics, tourism, popular culture, immigration, pedagogy and activism among other subject matter. Standard Letter

### COMM 7362 - Sem Public Address

**Credit Hours:** (3) **Description** Intensive study of selected topics in the analysis and criticism of public arguments; emphasis on cross-cultural comparison of arguments and appeal in common rhetorical situations. May be repeated for a maximum of 6 hours credit.

### COMM 7369 - Sem Org Communications

**Credit Hours:** (3) **Description** Selected variables of organizational communication with emphasis on methods of analyzing and auditing communication within the organizational setting. May be repeated for a maximum of 9 hours credit. Grades of S, U, or IP will be given.

### COMM 7371 - Rhetorical Criticism

**Credit Hours:** (3) *Cross listing* (Same as ENGL 7371-ENGL 8371) **Description** (Same as ENGL 7371-8371). Examines principal modes of contemporary rhetorical analysis.

### COMM 7374 - Directed Studies in Comm Arts

**Credit Hours:** (1-3) **Description** Directed research in areas of special interest including rhetoric, media, communication, and film and video production. May be repeated for a maximum of 9 hours.

### COMM 7434 - Qual Research Methods

**Credit Hours:** (3) **Description** Survey of qualitative research in communication studies including the design, collection, and analysis of qualitative data.

### COMM 7450 - Interpersonal Communication

**Credit Hours:** (3) **Description** Stages of relationship development and disengagement are covered using child development, psychological, and communication theories as lenses. In this course we use theory to examine how an atmosphere of closeness is created in one-to-one, small group, and even online interactions.

### COMM 7474 - Supv Comm & Leadership

**Credit Hours:** (3) **Description** Examination of the communication issues, strategies, and concepts involved in supervisory communication effectiveness. Review of current research regarding supervision, leadership, and teams.

### COMM 7616 - Contemp Rhet Theory

**Credit Hours:** (3) **Description** Examines key figures and ideas central to the development of rhetorical theory in the 20th and 21st century.

### COMM 7621 - Seminar Argumentation

**Credit Hours:** (3) *Cross listing* (Same as ENGL 7621 -ENGL 8621 ) **Description** (Same as ENGL 7621-8621). Examines historical and contemporary argumentation theories and how those theories are incorporated into teaching oral argumentation and composition. **PREREQUISITE(S):** AUSP 8003 or permission of instructor.

### COMM 7632 - Sem Rhet Criticism

**Credit Hours:** (3) **Description** Examination of the principal modes of contemporary rhetorical analysis such as Neoclassical, Burkean, Feminist, Cultural/Critical, and Poststructuralist. Repeatable for 9 hours.

## COMM 7802 - Internship

**Credit Hours:** (1-6) **Description** Field studies in communication; supervised practical work with government institutions, private business, film company, or broadcast and electronic media firm; written analysis of experience required. May be repeated for a maximum of 6 semester hours.  
**PREREQUISITE(S):** Permission of Instructor.

## COMM 7803 - Topics in Film Studies

**Credit Hours:** (3) **Description** Intensive study of selected film theories, periods, genres, or filmmakers. Topics will vary each time offered. May be repeated for a maximum of 9 hours.

## COMM 7804 - Sem Media Theory/Crit

**Credit Hours:** (3) **Description** Advanced survey of theories, approaches, and texts in the field of media studies. May be repeated for a maximum of 6 hours.

## COMM 7806 - Topics in Media Studies

**Credit Hours:** (3) **Description** Specific topics, issues, and research in media studies. Topics will vary each time offered. May be repeated for a maximum of 9 hours credit.

## COMM 7808 - Mass Comm & Society

**Credit Hours:** (3) **Description** Interrelationships between mass communications, the individual, and society. Topics will vary each time offered. May be repeated for a maximum of 6 credits.

## COMM 7809 - Sem Communication Hist

**Credit Hours:** (3) **Description** Selected topics in history of communication, including public address, film, broadcasting, and electronic media. May be repeated for a maximum of 6 hours.

## COMM 7815 - Sem History Rhetoric

**Credit Hours:** (3) *Cross listing* (Same as ENGL 7815-ENGL 8815) **Description** (Same as ENGL 7815-8815). Examines different periods and issues of rhetorical history each semester; one semester will consider Greek rhetoric (beginnings through New Testament); another will consider Latin rhetoric (Cicero through Renaissance); a third will cover

Scottish, British, and American rhetoric. May be repeated for a maximum of 9 hours when topic varies.

## COMM 7816 - Critical Discourse Studies

**Credit Hours:** 3 **Description** This course will introduce students to traditions and methods of discourse analysis broadly referred to as Critical Discourse Studies (CDS). CDS approaches are becoming more established in communication studies and related disciplines (e.g., rhetoric & composition) as methods for analyzing text and talk. Students in this course will become familiar with CDS theoretical approaches and methods for addressing their own research questions.

## COMM 7819 - Rhetoric Of Science

**Credit Hours:** (3) *Cross listing* (Same as ENGL 7819-ENGL 8819) **Description** This course examines scientific and technical communication from a rhetorical perspective, showing how scientific knowledge is shaped not only by data and method, but also by persuasive purposes and sociocultural forces.

## COMM 7820 - Topics In Rhetoric

**Credit Hours:** (3) *Cross listing* (Same as ENGL 7820-8820) **Description** Topical seminar devoted to an important aspect of the history, theory, or criticism of rhetoric. May be repeated for a maximum of 9 hours when topic varies.

## COMM 7891 - Graduate Film Production

**Credit Hours:** 3 **Description** Lecture/studio for film and video production. Students will learn the creative, aesthetic, technical, logistical and interpersonal aspects of fiction and/or nonfiction filmmaking. May be repeated for a maximum of 6 credits. **PREREQUISITE(S):** Permission of the instructor

## COMM 7892 - Film/Video Production

**Credit Hours:** (1-3) **Description** Workshop for film and video production. Students write, produce, direct, or assume crew responsibilities on productions. May be repeated for a maximum of 6 credits. See departmental guidelines for independent production requirements and procedures.  
**PREREQUISITE(S):** COMM 3824 or permission of instructor. Grades of A-F will be given.

## COMM 7991 - Sem Comparative Media

**Credit Hours:** (3) **Description** To demonstrate through intensive analysis what happens to the form and content of a creative work in its various adaptations: novel, condensation, stage, movie, and television. Open to all Theatre and Dance, Communication, and English majors. **PREREQUISITE(S):** A USP 8003 and A USP 8010 or permission of instructor.

### COMM 7993 - Special Problems

**Credit Hours:** (1-3) **Description** Directed individual investigation of special research projects not included in thesis. Grades of A-F will be given.

### COMM 7994 - Culminating Project

**Credit Hours:** (3-6) **Description** Culminating research project in lieu of a thesis. Course may be repeated up to 6 hours.

### COMM 7995 - Production Practicum

**Credit Hours:** (3-6) **Description** Creative performance or production project suitable for public presentation and/or a practical application. Project to be determined in consultation with and directed by the student's supervisory committee.

### COMM 7996 - Thesis

**Credit Hours:** (1-6) **Description** Grades of S, U, or IP will be given.

### COMM 8010 - Writ./Comm Cent. Theory/Meth

**Credit Hours:** (3) *Cross listing* ENGL 8010 **Description** Study of writing and communication center theory and methodology. Prepares graduate students for professional work as writing and communication center consultants and administrators.

### COMM 8012 - Seminar Health Comm \*\*

**Credit Hours:** (3) **Description** Examines current issues in health communication research, including patient-provider relationships, new technologies and health promotion, and health organizations.

### COMM 8013 - Sem Political Comm

**Credit Hours:** (3) **Description** Survey of critical and rhetorical theories of contemporary US political discourse; examines relationships among rhetoric, culture, and state power; assignments lead toward preparation of manuscript for eventual publication. May be repeated for a maximum of 9 hours credit.

### COMM 8014 - Public Health Communication

**Credit Hours:** (3) *Cross listing* (Same as PUBH 7014-8014). **Description** Explores communication studies theory and method that can be used to promote positive change in health concerns in public health care communication, including disseminating health information, health inequities, and health literacy.

### COMM 8017 - Introduction to Graduate Studies in Communication

**Credit Hours:** 3 **Description** This course is designed as an introduction to the norms and expectations of the graduate training in communication. Focusing on the major areas of academic assessment (teaching, research, and service), the course introduces students to various communication sub-fields with a particular emphasis on the department expertise; helps them articulate their teaching philosophy; teaches fundamentals of research such as developing research agenda/finding publication venues; and begins preparations for the academic and non-academic job market. Students are also introduced to some of the main methodological and theoretical approaches used in the discipline.

### COMM 8210-8219 - Special Topics in Communication Studies

**Credit Hours:** (1-3) **Description** Topics are varied and announced in online class listings.

### COMM 8321 - Communication Theory

**Credit Hours:** (3) **Description** Advanced studies of theories, models, and approaches to the study of communication.

### COMM 8322 - Persuasion & Influence

**Credit Hours:** (3) **Description** Examination of how people use communication to alter attitudes and behaviors of others in public and face-to-face settings; covers various social-scientific theories and research areas of persuasion and interpersonal influence.

### COMM 8331 - Topics in Communication Theory

**Credit Hours:** (3) **Description** Specific topics, issues, and research in communication theory. May be repeated for a maximum of 9 hours credit.

### COMM 8332 - Topics in Comm Methods

**Credit Hours:** (3) **Description** Examination of particular methodologies in communication research. Content will vary in response to current issues in the field. May be repeated for a maximum of 9 hours.

### COMM 8345 - Health Literacy

**Credit Hours:** (3) *Cross listing* (Same as PUBH 7345-PUBH 8345). **Description** This course introduces students to health literacy models and research from a health communication perspective. We explore the impact of health literacy on access to care, vulnerable populations, management of chronic illness, mental health, healthcare costs, caregiver and stakeholder health literacy, and other current issues.

### COMM 8350 - Rhetorical Theory

**Credit Hours:** (3) *Cross listing* (Same as ENGL 7350-ENGL 8350) **Description** History of rhetoric from the sophists through the present; may include reading from Isocrates, Plato, Aristotle, Cicero, Augustine, Erasmus, Ramus, Campbell, Blair, John Q. Adams, and others.

### COMM 8351 - African-American Public Address

**Credit Hours:** 3 **Description** Examines the African American rhetorical tradition from classical times up to the present. Engages in a close reading of texts and draws upon the practical tools of rhetorical criticism to examine, understand, and analyze the discourse of African Americans throughout American history. Standard Letter

### COMM 8352 - Rhetoric, Race, Religion

**Credit Hours:** 3 **Description** Examines the intersection of rhetoric race and religion. Using uses rhetoric as a method illustrates how rhetorical approaches to religion can contribute to a deeper and more meaningful understanding of both religion and race. Standard Letter

### COMM 8353 - Topics in Prophetic Rhetoric

**Credit Hours:** 3 **Description** Specific topics, issues, and research in prophetic rhetoric. Topics will vary each time offered. repeatable for up to 9 hours Standard Letter

### COMM 8354 - Topics in Rhetoric of Health, Medicine and Science

**Credit Hours:** 3 **Description** Specific topics, issues, and research in rhetoric of health, science, and medicine. Topics will vary each time offered. repeatable for up to 9 hours Standard Letter

### COMM 8355 - Topics in Critical Cultural Studies

**Credit Hours:** 3 **Description** Specific topics, issues, and research in critical cultural studies. Topics will vary each time offered. repeatable for up to 9 hours Standard Letter

### COMM 8356 - Feminist Media Studies

**Credit Hours:** 3 **Description** Surveys feminist media studies from early and pre-feminist work, paying particular attention to how feminist media studies has intersected with anti-racist, queer, and class-based perspectives. Standard Letter

### COMM 8357 - Pedagogical Rhetoric

**Credit Hours:** 3 **Description** Surveys the dominant means and ends of rhetorical instruction since antiquity. Assignments and course readings foreground the practice of pedagogy in assessing the history, scope, and future of rhetoric study. Standard Letter

### COMM 8358 - Critical Regionalism and Rhetoric

**Credit Hours:** 3 **Description** Focuses on how regionalism is created rhetorically as a strategic identity developing insider and outsider status in a variety of contexts. Specific attention will be given to the tensions between regional identity and the crossing of borders. Regional culture will be discussed in terms of religion, politics, tourism, popular culture, immigration, pedagogy and activism among other subject matter. Standard Letter

### COMM 8362 - Seminar Public Address

**Credit Hours:** (3) **Description** Intensive study of selected topics in the analysis and criticism of public arguments; emphasis on cross-cultural comparison of arguments and appeal in common rhetorical situations. May be repeated for a maximum of 6 hours credit.

### COMM 8369 - Sem Org Communications

**Credit Hours:** (3) **Description** Selected variables of organizational communication with emphasis on methods of analyzing and auditing communication within the organizational setting. May be repeated for a maximum of 9 hours credit.

### COMM 8371 - Rhetorical Criticism

**Credit Hours:** (3) *Cross listing* (Same as ENGL 7371-ENGL 8371) **Description** Examines principal modes of contemporary rhetorical analysis. **PREREQUISITE(S):** Permission of instructor. Grades A-F will be given.

### COMM 8374 - Directed Studies in Comm Arts

**Credit Hours:** (1-3) **Description** Directed research in areas of special interest including rhetoric, media, communication, and film and video production. May be repeated for a maximum of 9 hours. **PREREQUISITE(S):** Permission of instructor. Grades. A-F will be given.

### COMM 8434 - Qual Research Methods

**Credit Hours:** (3) **Description** Survey of qualitative research in communication studies including the design, collection, and analysis of qualitative data.

### COMM 8450 - Interpersonal Communication

**Credit Hours:** (3) **Description** Stages of relationship development and disengagement are covered using child development, psychological, and communication theories as lenses. In this course we use theory to examine how an atmosphere of closeness is created in one-to-one, small group, and even online interactions.

### COMM 8474 - Supv Comm & Leadership

**Credit Hours:** (3) **Description** Examination of the communication issues, strategies, and concepts involved in

supervisory communication effectiveness. Review of current research regarding supervision, leadership, and teams.

### COMM 8616 - Comtemp Rhet Theory

**Credit Hours:** (3) **Description** Examines key figures and ideas central to the development of rhetorical theory in the 20th and 21st century.

### COMM 8621 - Seminar Argumentation

**Credit Hours:** (3) *Cross listing* (Same as ENGL 7621 -ENGL 8621 ) **Description** Examines historical and contemporary argumentation theories and how those theories are incorporated into teaching oral argumentation and composition.

### COMM 8632 - Sem Rhet Criticism

**Credit Hours:** (3) **Description** Examination of the principal modes of contemporary rhetorical analysis such as Neoclassical, Burkean, Feminist, Cultural/Critical, and Poststructuralist. Repeatable for 9 hours.

### COMM 8803 - Topics in Film Studies

**Credit Hours:** (3) **Description** Intensive study of selected film theories, periods, genres, or filmmakers. Topics will vary each time offered. May be repeated for a maximum of 9 hours.

### COMM 8804 - Sem Media Theory/Crit

**Credit Hours:** (3) **Description** Advanced survey of theories, approaches, and texts in the field of media studies. May be repeated for a maximum of 6 hours.

### COMM 8806 - Topics in Media Studies

**Credit Hours:** (3) **Description** Specific topics, issues, and research in media studies. Topics will vary each time offered. May be repeated for a maximum of 9 hours credit

### COMM 8808 - Mass Comm & Society

**Credit Hours:** (3) **Description** Interrelationships between mass communications, the individual, and society. Topics will vary each time offered. May be repeated for a maximum of 6 credits.

### COMM 8809 - Sem Communication Hist

**Credit Hours:** (3) **Description** Selected topics in history of communication, including public address, film, broadcasting, and electronic media. May be repeated for a maximum of 6 hours.

### COMM 8815 - Sem History Rhetoric

**Credit Hours:** (3) *Cross listing* (Same as ENGL 7815-ENGL 8815) **Description** Examines different periods and issues of rhetorical history each semester; one semester will consider Greek rhetoric (beginnings through New Testament); another will consider Latin rhetoric (Cicero through Renaissance); a third will cover Scottish, British, and American rhetoric. May be repeated for a maximum of 9 hours when topic varies.

### COMM 8816 - Critical Discourse Studies

**Credit Hours:** 3 **Description** This course will introduce students to traditions and methods of discourse analysis broadly referred to as Critical Discourse Studies (CDS). CDS approaches are becoming more established in communication studies and related disciplines (e.g., rhetoric & composition) as methods for analyzing text and talk. Students in this course will become familiar with CDS theoretical approaches and methods for addressing their own research questions.

### COMM 8819 - Rhetoric Of Science

**Credit Hours:** (3) *Cross listing* (Same as ENGL 7819-ENGL 8819) **Description** This course examines scientific and technical communication from a rhetorical perspective, showing how scientific knowledge is shaped not only by data and method, but also by persuasive purposes and sociocultural forces.

### COMM 8820 - Topics In Rhetoric

**Credit Hours:** (3) *Cross listing* (Same as ENGL 7820-ENGL 8820) **Description** Topical seminar devoted to an important aspect of the history, theory, or criticism of rhetoric. May be repeated for a maximum of 9 hours when topic varies.

### COMM 8993 - Special Problems

**Credit Hours:** (1-3) **Description** Directed individual investigation of special research projects not included in thesis. Grades of A-F will be given.

### COMM 8995 - Production Practicum

**Credit Hours:** (3-6) **Description** Creative performance or production project suitable for public presentation and/or a practical application. Project to be determined in consultation with and directed by the student's supervisory committee.

### COMM 8996 - Reading for Comps

**Credit Hours:** (1-9) **Description** Arranged on an individual basis for communication students only. May be taken only at the end of coursework to fulfill the requirements for the PhD. Does not count toward the 45 hours of academic coursework required for the degree.

### COMM 9000 - Dissertation

**Credit Hours:** (1-9) **Description** For students who have passed their comprehensive exam and have an approved prospectus to write their dissertation under the direction of their advisor. Grades of S, U, or IP will be given.

## Communication and Fine Arts

### CCFA 7001 - Arts Entrepreneurship I \*\*

**Credit Hours:** 3 **Description** Historical and philosophical understanding of entrepreneurship in the arts; developing a written proposal for arts startup.

### CCFA 7002 - Arts Entrepreneurship II \*\*

**Credit Hours:** 3 **Description** Developing a business model and marketing plan for an arts startup. **PREREQUISITE(S):** CCFA 7001

### CCFA 7003 - Arts Entrepreneurship III

**Credit Hours:** 3 **Description** Brand and product development for an arts startup. **PREREQUISITE(S):** CCFA 7001 & 7002

### CCFA 7004 - Arts Entrepreneurship IV

**Credit Hours:** 3 **Description** Funding the arts startup and formally pitching the product. **PREREQUISITE(S):** CCFA 7001, 7002, 7003

## Communication Sciences and Disorders

### **AMSL 6205 - Cultural Sensitivity for the Deaf and Hard of Hearing in Healthcare Settings**

**Credit Hours:** 3 Former: A USP **Description** This course presents functional vocabulary and phrases of American Sign Language appropriate for use in healthcare settings. Students are exposed to elements of Deaf Culture and provided instruction on how to work with the Deaf and Hard of Hearing community.

### **AMSL 6206 - Deaf Culture & Deaf History**

**Credit Hours:** 3 Former: A USP **Description** This course is designed to introduce the most important aspects of the American Deaf experience by exploring the history, contributions, and contemporary lives of Deaf people in America.

### **AMSL 6207 - Psychological, Sociological, and Educational Perspectives of Deafness**

**Credit Hours:** 3 Former: A USP **Description** This class focuses on multiple perspectives including psychological, sociological, and educational issues from the point of view of d/Deaf adults and professionals in these fields who work with the d/Deaf.

### **AMSL 6208 - Introduction to Interpreting American Sign Language**

**Credit Hours:** 3 Former: A USP **Description** This course provides students with the key concepts and information about the ethics and competencies necessary to become an interpreter for the Deaf.

### **AMSL 6209 - Linguistics in American Sign Language**

**Credit Hours:** 3 Former: A USP **Description** This course defines language and linguistics as it pertains to American Sign Language. There is a focus on phonology, morphology and building new signs, deriving nouns from verbs, compounds, fingerspelling and numerical incorporation. The study of syntax includes basic sentence types, lexical categories, word order, time and aspect, verbs and function of space, bilingualism, and American Sign Language as art.

### **A USP 6001 - Accent Modification**

**Credit Hours:** (1) **Description** This course is an individually directed study of standard pronunciation, stress patterns, and intonation of American English for speakers of English as a foreign language. It is focused toward students who desire to improve their speech intelligibility in American English. Permission of instructor required. (S/U).

### **A USP 6006 - Language & Speech Development**

**Credit Hours:** (3) *Cross listing* (A USP 4006) **Description** Normal acquisition of speech and language in young children, contemporary theories of language acquisition, bilingual differences, and early literacy and play skills.

### **A USP 6106 - Introduction to Audiology**

**Credit Hours:** (3) *Cross listing* (A USP 4106). **Description** Introduction to anatomy and physiology of the ear; the etiology, pathology and treatment of hearing loss; and the educational implications of hearing loss; also introduces hearing assessment techniques, including audiogram interpretation. A USP 4106 as cross listed. Standard Letter

### **A USP 6205 - Cultural Sensitivity for the Deaf and Hard of Hearing in Healthcare Settings**

**Credit Hours:** (3) **Description** This course presents functional vocabulary and phrases of American Sign Language appropriate for use in healthcare settings. Students are exposed to elements of Deaf Culture and provided instruction on how to work with the Deaf and Hard of Hearing community. **PREREQUISITE(S):** None **COREQUISITE(S):** None

### **A USP 6300 - Autism: Communic & Socializtn**

**Credit Hours:** (3) **Description** Nature and origin of autism, presenting up-to-date information about proposed causes, both genetic and environmental. The course will also provide a view of progress made in treatment of autism, especially when identification of the disorder can be made early in life.

### **A USP 6301 - Survey Neurological Disorders**

**Credit Hours:** (3) **Description** An applied interprofessional framework will be used throughout the course to integrate

neuropathology and basic understanding of neural structure and function with the teamwork and communication skills needed to work effectively on a health care team. Invited professionals with expertise in a variety of neurological disorders will provide interprofessional clinical-case experiences.

### **AUSP 7000 - Speech Science**

**Credit Hours:** (3) **Description** Contemporary survey of phonetic sciences; detailed discussion of neurological, physiological, acoustic, and perceptual processes involved in the production, transmission, and intelligibility of the speech signal.

### **AUSP 7001 - Psychoacoustics**

**Credit Hours:** (3) **Description** Basic acoustics, psychoacoustical methods, and psychoacoustical findings presented with emphasis on matters of greatest importance for foundations of audiological practice.

### **AUSP 7002 - Sem Comm Sciences**

**Credit Hours:** (1-3) **Description** Advanced study of selected aspects of basic sciences related to hearing, speech, or language; with different content, may be repeated for up to 6 hours credit at 7000 level or up to 12 hours at 8000 level. **PREREQUISITE(S):** Permission of instructor.

### **AUSP 7003 - Anat Phys Spch Mech**

**Credit Hours:** (3) **Description** Structure and function of bodily organs related to the processes of speech production.

### **AUSP 7004 - Anat Phys Hear Mec**

**Credit Hours:** (3) **Description** Structure and function of outer, middle, inner ear, and auditory neural pathways; formation of auditory system in context of general prenatal development.

### **AUSP 7005 - Language Sample Analysis**

**Credit Hours:** (1) **Description** Covers procedures for collecting and interpreting language samples using specialized software and other methods. S/U/I

### **AUSP 7006 - Lang & Speech Devel**

**Credit Hours:** (3) **Description** Normal acquisition and maintenance of speech and language, theoretical formulations about language and speech behavior, and approaches to its study. Students observe and describe the language of children of various ages whose development is within normal range.

### **AUSP 7007 - Commun Interaction**

**Credit Hours:** (3) **Description** Concepts and processes fundamental to communicative interaction; emphasis on application of such concepts and processes to the student's own communicative interactions.

### **AUSP 7008 - Acoustic/Percept Phonetics**

**Credit Hours:** (3) **Description** Survey of experimental phonetics: acoustic phonetic theory; speech perception theory and research; techniques of acoustic analysis and synthesis. **PREREQUISITE(S):** Permission of instructor.

### **AUSP 7010 - Neurol Bases Comm**

**Credit Hours:** (2) **Description** Review of the neuroanatomy of the central and peripheral nervous systems and the physiology of nerves and muscles; attention on cortical and subcortical structures and on neuropsychological processes that are attributed to speech and/or language functions. This course builds on fundamental concepts in language, speech and hearing.

### **AUSP 7011 - Psycholinguistics**

**Credit Hours:** (3) **Description** Historical and recent trends in linguistics; relationship between brain, language, and cognition; knowledge and processes involved in speaking and listening; topics include nature of mental representations and organization of knowledge; speech perception; lexical, sentence, and discourse processing; speech and language production.

### **AUSP 7015 - Prof Writing/Comm Dsord**

**Credit Hours:** (1) **Description** Overview of grammatical concepts, including syntactic form and function, and proofreading skills; specific application to audiology and speech-language pathology coursework, as well as academic, scientific, and clinical writing.

### **AUSP 7016 - Sociocultrl Base Comm**



**Credit Hours:** (3) **Description** Influences of socio-cultural factors such as age, religion, ethnicity, socioeconomic status, and geographic region, on communication; emphasis on cross-cultural communication in educational and health-care settings.

### **AUSP 7032 - Professional Development in Communication Sciences and Disorders**

**Credit Hours:** 1 **Description** This course provides students with the theoretical and practical foundations needed to be a successful graduate student and an early career professional. This class is for the first semester graduate student to help them gain the practical soft skills needed to be a graduate student. **PREREQUISITE(S):** None

### **AUSP 7101 - Audiol Concepts**

**Credit Hours:** (3) **Description** Basic audiological concepts and their applicability to clinical procedures; topics include pure-tone air and bone conduction procedures, clinical masking, speech threshold and recognition testing, acoustic immittance, and acoustic reflex testing; weekly laboratory exercises included.

### **AUSP 7104 - Clincl Exper Audiology**

**Credit Hours:** (1-6) **Description** Supervised clinical experience in the evaluation and/or management of clients with hearing impairments; designed to meet student's individual needs. May be repeated as often as desired. Grades of A-F, or IP will be given.

### **AUSP 7106 - Intro Surv Of Audiology**

**Credit Hours:** (3) **Description** Introduction to anatomy and physiology of the ear; the etiology, pathology, and treatment of hearing loss; and the educational implications of hearing loss; also introduces hearing assessment techniques, including audiogram interpretation.

### **AUSP 7107 - Auditory Implant Technology**

**Credit Hours:** (3) **Description** Cochlear implant technology, signal processing, candidacy, surgery, speech perception performance, and follow-up for adults and children; implantable hearing devices, such as middle ear implants and bone-anchored hearing aids.

### **AUSP 7113 - Intro to Audiologic Rehab**

**Credit Hours:** (3) **Description** Roles of auditory, visual, and bisensory cues in communication: effects of hearing impairment on speech and language development; psychology of deafness and deaf culture; prosthetic devices.

**PREREQUISITE(S):** AUSP 6106 ,AUSP 8101 or AUSP 7106

### **AUSP 7117 - Individual Study/Audiol**

**Credit Hours:** (3) **Description** Directed topics include physics of sound, hearing loss, basic audiometric testing and hearing conservation. Grades of A-F, or IP will be given.

### **AUSP 7122 - Aural Rehabilitation**

**Credit Hours:** (3) **Description** Introduction to rehabilitative procedures for hearing-impaired children and adults; topics include minimal hearing loss, auditory perception of speech, amplification, speech and language behaviors, psychosocial problems, educational deficits and management; (re)habilitation programs for children and adults, and cochlear implants. Primarily for non-audiology majors.

### **AUSP 7123 - Clinical Applic Sign Language**

**Credit Hours:** (1) **Description** Basic sign language skills, including vocabulary and finger-spelling, that can be used in clinical interactions with D/deaf or nonverbal clients and their families. By permit only.

### **AUSP 7124 - Clinical Educ Comm Disorders**

**Credit Hours:** (1-3) **Description** Processes involved in the clinical education of student clinicians in the areas of audiology and speech-language pathology. Experiences in supervision of student clinicians provided.

**PREREQUISITE(S):** Permission of instructor.

### **AUSP 7127 - Rehabilitatv Audiol II**

**Credit Hours:** (3) **Description** Study of qualitative and quantitative methods to assess communicative function in adult individuals with hearing impairment; use of assessment tools for identifying intervention goals and for measuring outcomes; review and evaluation of current rehabilitative programs and strategies. **PREREQUISITE(S):** AUSP 7101/AUSP 8101 and AUSP 7104/AUSP 8104 or permission of instructor.

### **AUSP 7129 - Psychosoc Adj Hrng Impr**

**Credit Hours:** (3) **Description** Seminar on facilitation of psychosocial and behavioral adjustment to hearing impairment and impact of cognitive status, general health and stigma on functional communication and social interaction of aging adults and their families; emphasis on exploration of appropriate counseling skills and strategies in both individual and group settings.

### **AUSP 7130-7139 - Special Topics in Audiology and Speech Pathology**

**Credit Hours:** (3) **Description** Topics are varied and announced in online class listings.

### **AUSP 7200 - Intro Clin Pract**

**Credit Hours:** (2) **Description** Introduction to clinical practicum in speech and language disorders. For students without prior practical graduate experience in communication disorders. Normally taken concurrently with AUSP 7501.

### **AUSP 7201 - Cleft Palate/Craniofac Dis**

**Credit Hours:** (3) **Description** Cleft palate speech with emphasis on articulatory, resonance, and phonatory aspects as well as medical and habilitative and rehabilitative principles. **PREREQUISITE(S):** AUSP 7003 and AUSP 7200 or permission of instructor.

### **AUSP 7202 - Motor Speech Dis/Child**

**Credit Hours:** (3) **Description** Speech deficits attributable to developmental neuromuscular disorder; etiologies and classifications of cerebral palsy, hormonal disturbances, myopathologies, and various genetic disorders; review of contemporary approaches to diagnosis and management of developmental dysarthria and apraxia; special problems associated with treating profoundly- and multiply-handicapped child. **PREREQUISITE(S):** AUSP 7003/AUSP 8003 and AUSP 7010/AUSP 8010 or permission of instructor.

### **AUSP 7203 - Voice Disorders**

**Credit Hours:** (3) **Description** In depth review of voice disorders by patterns of deviation, etiology, and techniques of intervention. Opportunity for original papers and/or projects. **PREREQUISITE(S):** AUSP 7003/AUSP 8003 or permission of instructor.

### **AUSP 7204 - Disorders Phonology/Articulation**

**Credit Hours:** (3) **Description** Current research in disorders of phonology and articulation, including assessment, production, and remediation procedures.

### **AUSP 7205 - Fluency Disorders**

**Credit Hours:** (3) **Description** A discussion of the nature, assessment, and treatment of fluency problems including developmental stuttering, cluttering, and acquired fluency disorders. Clinical rationales and protocols for children, adolescents, and adults are presented along with a review of the critical variables that contribute to a successful therapeutic outcome.

### **AUSP 7206 - Developmental and Acquired Speech Motor Disorders**

**Credit Hours:** (3) **Description** Advanced study of the neurological and speech production characteristics associated with the dysarthrias and apraxia of speech that occur across the lifespan. This course will also provide students with strategies and tools for the assessment, differential diagnosis, classification, and interdisciplinary clinical management of these speech disorders in children and adults. **PREREQUISITE(S):** AUSP 7003/AUSP 8003 and AUSP 7010/AUSP 8010 or permission of instructor.

### **AUSP 7207 - Clinical Instrumentation**

**Credit Hours:** (1-3) **Description** Principles and procedures for measurement of speech and voice function and dysfunction; standardization, validity, and reliability of instrumental procedures; hands-on experience with acquisition and interpretation of acoustic and physiologic data for speech pathologies.

### **AUSP 7208 - Clin Exp Spch Lang Path**

**Credit Hours:** (1-3) **Description** Supervised clinical practice with clients. Designed to meet student's individual needs. May be repeated as often as desired Standard Letter

### **AUSP 7209 - Dysphagia/Related Disor**

**Credit Hours:** (3) **Description** Anatomy and physiology of normal deglutition; nature and characteristics of swallowing disorders; methods of evaluation and management of

dysphagia in adults and children; and consideration of medical conditions such as aspiration pneumonia, tracheostomy, and other complicating factors associated with dysphagia.

**PREREQUISITE(S):** AUSP 7003/AUSP 8003 and AUSP 7010/AUSP 8010 or permission of instructor.

### **AUSP 7210 - Sem Speech Pathology**

**Credit Hours:** (1-3) **Description** Selected areas of speech or language disorders. With different content, may be repeated for up to 6 hours at the 7000 level or for up to 12 hours at the 8000 level.

### **AUSP 7211 - Clinical Exp School Pers**

**Credit Hours:** (1-2) **Description** Supervised clinical experience designed to meet the needs of practicing public school personnel. **PREREQUISITE(S):** Permission of the Coordinator of Graduate Studies and completion of one semester of AUSP 7208 A-F, or IP will be given.

### **AUSP 7212 - Autism Spect Disord/Rel Disabl**

**Credit Hours:** (3) **Description** Review of characteristics and etiology of autism spectrum disorders, including strategies for language and communication evaluation, assessment, and intervention with children, adolescents and adults with autism spectrum disorders and related severe communicative disabilities.

### **AUSP 7213 - Comm Dis in Diverse Cultures**

**Credit Hours:** (1) **Description** Study Abroad. For graduate students in communication sciences and disorders for one week with additional preparation prior to and following the study abroad experience. Students will experiences the challenges of providing professional services with limited resources in under-served communities and gain awareness of the health care availability in diverse cultures. May be repeated for upto 3 credit-hours. **PREREQUISITE(S):** Permission of instructor.

### **AUSP 7214 - Advanced Clinical Laboratory**

**Credit Hours:** 1-3 **Description** This course provides students with advanced theoretical knowledge and practical skills required in specialty clinics and helps students connect didactic and practical aspects of advanced clinical practice. \$35 per credit hour 3 **PREREQUISITE(S):** *Permission of instructor (student must have completed the relevant required*

*didactic course or be concurrently enrolled in the relevant course).*

### **AUSP 7300 - Lang Dis In Children**

**Credit Hours:** (3) **Description** Perceptual, social, and cognitive correlates of language disorders associated with specific language impairment, phonological disorders, mental retardation, autism, and hearing impairment; assessment, diagnosis, and treatment of language disorders in young children (0-6 years).

### **AUSP 7302 - Lang Disorders/Adults I**

**Credit Hours:** (3) **Description** This course addresses communicative and cognitive deficits associated with focal and non-focal neurological disease; differential diagnosis, assessment, and management of adults with aphasia and right hemisphere communication disorders and other acquired language disorders. **PREREQUISITE(S):** AUSP 7003/AUSP 8003 and AUSP 7010/AUSP 8010, or permission of instructor.

### **AUSP 7303 - Lang Disorders/Adults II**

**Credit Hours:** (3) **Description** Communicative and cognitive deficits associated with nonfocal neurological disease; differential diagnosis, assessment, and management of individuals with traumatic brain injury, dementia, and other disorders. **PREREQUISITE(S):** AUSP 7003/AUSP 8003 and AUSP 7010/AUSP 8010 or permission of instructor

### **AUSP 7304 - Sem Lang Disorders**

**Credit Hours:** (1-3) **Description** Detailed study of selected topics in language disorders in children and adults. With different content, may be repeated for up to 6 hours at the 7000 level or 12 hours at the 8000 level. **PREREQUISITE(S):** Permission of instructor.

### **AUSP 7305 - Language Learning Disabilities**

**Credit Hours:** (3) **Description** Assessment and treatment of spoken and written language disorders in school-age children and adolescents with special emphasis on the collaborative role of the speech-language pathologist in school-based settings; attentional and social deficits associated with language-learning disabilities.

### **AUSP 7308 - Augmentative/Alternatv Comm**

**Credit Hours:** (3) **Description** Comprehensive overview of theoretical and practical issues related to use of augmentative and alternative communication (AAC) systems; assessment and intervention strategies for children and adults in need of AAC.

### **AUSP 7309 - Sp Rehab/Head-Neck Path**

**Credit Hours:** (3) **Description** Etiology, disordered anatomy, and physiology resulting from cancer of head and neck; ways in which cancer, surgery, and other medical treatments affect speech and voice functioning and swallowing; diagnostic and treatment approaches.

### **AUSP 7500 - Eval Resrch Comm Disord**

**Credit Hours:** (1-3) **Description** A discussion of concepts and skills that prepare students to be intelligent consumers of research. Topics include the interpretation of basic statistical concepts, forms of empirical research, threats to internal and external validity, research designs, and issues related to evidence based practice, the publishing process, the protection of research participants, and writing with precision.

### **AUSP 7501 - Phonetic Transcript**

**Credit Hours:** (1) **Description** Broad and narrow transcription techniques and opportunities for transcription practice with normal and disordered populations.

### **AUSP 7502 - Intro to Phonetic Transcriptio**

**Credit Hours:** (1) **Description** Fundamentals of broad phonetic transcription including opportunities for transcription practice with standard American English materials.

### **AUSP 7505 - Interprofessional Educ & Pract**

**Credit Hours:** (1-3) Former: 7505 **Description** Provides Interprofessional Education and Practice (IPE/IPP) training focused on communication and collaboration through team-based approaches to the planning and delivery of person-centered care. Students learn IPE/IPP principles, review case studies, and engage in clinic- and community-based IPE/IPP experiences. \$25 per credit hour This course can be repeated up to 3 credits S/U/I

### **AUSP 7514 - Cognitive Science Seminar**

**Credit Hours:** (3) *Cross listing* PHIL 7514, COMP 7514, PSYC 7514 **Description** Systematic study of current topics in Cognitive Science with an emphasis on its interdisciplinary nature. Topics will vary each semester. Only nine credit hours may be counted toward degree requirements.

### **AUSP 7515 - Scientific Ethics and Responsible Conduct in Research**

**Credit Hours:** 2 **Description** This course will identify ethical issues surrounding the responsible conduct of scientific research and involve students in the discussion of cases from a range of disciplines. The course is appropriate for any student of the natural, social, engineering, or data-based sciences, and satisfies the NIH and NSF training requirements for responsible conduct in research. **PREREQUISITE(S):** None **COREQUISITE(S):** None

### **AUSP 7700 - Individ Readings Audiol**

**Credit Hours:** (1-3) **Description** Directed independent study of literature in an area of audiology. May be repeated as often as desired. Grades of A-F, or IP will be given. May be repeated as often as desired

### **AUSP 7800 - Ind Read Speech-Language Path**

**Credit Hours:** (1-3) **Description** Directed independent study in the areas of speech or language pathology. May be repeated as often as desired. Grades A-F, or IP will be given.

### **AUSP 7990 - Research Activity**

**Credit Hours:** (1-3) **Description** Students complete research activity under faculty guidance. May be taken three times. 3 **PREREQUISITE(S):** Permission of individual faculty members to be involved.

### **AUSP 7991 - Introduction to Research Activity**

**Credit Hours:** (1) **Description** Presentations and discussions about ongoing faculty research in Communication Sciences and Disorders to guide students' selection of labs and research activities.

### **AUSP 7996 - Thesis**

**Credit Hours:** (1-3) **Description** Academic credit for thesis may be taken for a maximum of 6 hours and a minimum of 3 hours degree credit. Only 3 credits may be applied toward degree requirements for the master's degree. Grades of S, U, or IP will be given.

### **AUSP 8000 - Speech Science**

**Credit Hours:** (3) **Description** Contemporary survey of phonetic sciences; detailed discussion of neurological, physiological, acoustic, and perceptual processes involved in the production, transmission, and intelligibility of the speech signal.

### **AUSP 8001 - Psychoacoustics**

**Credit Hours:** (3) **Description** Basic acoustics, psychoacoustical methods, and psychoacoustical findings presented with emphasis on matters of greatest importance for foundations of audiological practice.

### **AUSP 8002 - Sem Comm Sciences**

**Credit Hours:** (1-3) **Description** Advanced study of selected aspects of basic sciences related to hearing, speech, or language; with different content, may be repeated for up to 6 hours credit at 7000 level or up to 12 hours at 8000 level. **PREREQUISITE(S):** Permission of instructor.

### **AUSP 8003 - Anat Phys Speech Mech**

**Credit Hours:** (3) **Description** Structure and function of bodily organs related to the processes of speech production.

### **AUSP 8004 - Anat Phys Hear Mec**

**Credit Hours:** (3) **Description** Structure and function of outer, middle, inner ear, and auditory neural pathways; formation of auditory system in context of general prenatal development.

### **AUSP 8005 - Language Sample Analysis**

**Credit Hours:** (1) **Description** Covers procedures for collecting and interpreting language samples using specialized software and other methods.

### **AUSP 8006 - Lang & Speech Devel**

**Credit Hours:** (3) **Description** Normal acquisition and maintenance of speech and language, theoretical formulations about language and speech behavior, and approaches to its study. Students observe and describe the language of children of various ages whose development is within normal range.

### **AUSP 8007 - Commun Interaction**

**Credit Hours:** (3) **Description** Concepts and processes fundamental to communicative interaction; emphasis on application of such concepts and processes to the student's own communicative interactions.

### **AUSP 8008 - Acoustic/Percept Phonetics**

**Credit Hours:** (3) **Description** Survey of experimental phonetics: acoustic phonetic theory; speech perception theory and research; techniques of acoustic analysis and synthesis. **PREREQUISITE(S):** Permission of instructor.

### **AUSP 8010 - Neurol Bases Comm**

**Credit Hours:** (2) **Description** Review of the neuroanatomy of the central and peripheral nervous systems and the physiology of nerves and muscles; attention on cortical and subcortical structures and on neuropsychological processes that are attributed to speech and/or language functions.

### **AUSP 8011 - Psycholinguistics**

**Credit Hours:** (3) **Description** Historical and recent trends in linguistics; relationship between brain, language, and cognition; knowledge and processes involved in speaking and listening; topics include nature of mental representations and organization of knowledge; speech perception; lexical, sentence, and discourse processing; speech and language production.

### **AUSP 8012 - Measurement Techniques**

**Credit Hours:** (3) **Description** Principles and techniques involved in evaluation of equipment and environments used in practice of Audiology; major focus on the topics of calibration, of audiological instrumentation. Laboratory experience is provided. **PREREQUISITE(S):** AUSP 8001 or permission of instructor.

### **AUSP 8013 - Calibration and Conservation**

**Credit Hours:** (3) **Description** Professional and legal roles and responsibilities of audiologists with regard to clinical

instrumentation, equipment calibration, measurement of signals in clinical audiology, and implementation of hearing conservation programs. Standard Letter

### **AUSP 8016 - Sociocultrl Base Comm**

**Credit Hours:** (3) **Description** Influences of socio-cultural factors such as age, religion, ethnicity, socioeconomic status, and geographic region, on communication; emphasis on cross-cultural communication in educational and health-care settings.

### **AUSP 8017 - Digitl Signl Proc Sp/Hear**

**Credit Hours:** (3) **Description** Survey of modern methods for processing of physiological and acoustic signals: interfacing components; analog-digital and digital-analog conversion; mathematical basics for signal processing applications; programming concepts.

### **AUSP 8019 - Anat/Phys Aud Sys**

**Credit Hours:** (3) **Description** This course is designed to teach the principle concepts of anatomy, physiology, electrophysiology, and neurophysiology of the peripheral and central auditory and vestibular systems.

### **AUSP 8020 - Auditory Processing Across the Lifespan**

**Credit Hours:** (3) **Description** This course is designed to provide knowledge of normal and abnormal neurophysiology and neuroplasticity in the central auditory nervous system across the lifespan of human development.

**PREREQUISITE(S):** AUSP 8019 or permission of instructor.

### **AUSP 8021 - Prof Prep/Scientists**

**Credit Hours:** (1) **Description** Preparation of early PhD students for the role of scientist in the academic and clinical community; rotating themes include ethics, the publication and review process, teaching strategies and techniques, mentoring, grant preparation, and presentation of research. May be repeated for a maximum of 6 credit hours.

### **AUSP 8030 - Tinnitus Treatment and Private Practice**

**Credit Hours:** 3 **Description** Foundational knowledge for establishing a successful tinnitus treatment program in a private practice setting. Business considerations for audiologists are addressed. **PREREQUISITE(S):** AUSP 8101, AUSP 8103, AUSP 8019, AUSP 8020, or permission of instructor.

### **AUSP 8031 - Practice Management and Billing in Audiology**

**Credit Hours:** 3 **Description** This course provides students with the theoretical foundations behind billing and coding that are essential to practice management with emphasis on the role of Medicare. \$35 per credit hour **PREREQUISITE(S):** AUSP 8104

### **AUSP 8032 - Professional Development in Communication Sciences and Disorders**

**Credit Hours:** 1 **Description**

This course provides students with the theoretical and practical foundations needed to be a successful graduate student and an early career professional. This class is for the first semester graduate student to help them gain the practical soft skills needed to be a graduate student.

**PREREQUISITE(S):** None

### **AUSP 8100 - Ind Read Audiology**

**Credit Hours:** (1-6) **Description** Directed independent study of literature in an area of audiology. May be repeated for a maximum of 6 credit hours. Grades of A-F, or IP will be given.

### **AUSP 8101 - Audiol Concepts**

**Credit Hours:** (3) **Description** Basic audiological concepts and their applicability to clinical procedures; topics include pure-tone air and bone conduction procedures, clinical masking, speech threshold and recognition testing, acoustic immittance, and acoustic reflex testing; weekly laboratory exercises included.

### **AUSP 8103 - Diag/Medical Audiology**

**Credit Hours:** (3) **Description** Differential diagnosis of hearing loss including behavioral and acoustic (otoacoustic emissions) tests and introduction to electrophysiological tests; clinical decision analysis; medical audiology; cerumen management. **PREREQUISITE(S):** AUSP 8019, AUSP

7101/AUSP 8101 or permission of instructor.  
COREQUISITE(S): AUSP 7104/AUSP 8104

### **AUSP 8104 - Clinicl Exper Audiology**

**Credit Hours:** (1-6) **Description** Supervised clinical experience in the evaluation and/or management of clients with hearing impairments; designed to meet student's individual needs. May be repeated as often as desired Standard Letter

### **AUSP 8105 - Vestibular Assmt/Rehab**

**Credit Hours:** (3) **Description** Evaluation of balance function using a test battery approach according to cross-check principles; interpretation of test results and rehabilitation of balance disorders. **PREREQUISITE(S):** AUSP 7103/AUSP 8103 , or permission of instructor.

### **AUSP 8107 - Auditory Implant Technology**

**Credit Hours:** (3) **Description** Cochlear implant technology, signal processing, candidacy, surgery, speech perception performance, and follow-up for adults and children; implantable hearing devices, such as middle ear implants and bone-anchored hearing aids.

### **AUSP 8110 - Studebaker Lectures**

**Credit Hours:** (1) **Description** Lecture series covering broad range of topics presented by nationally and internationally recognized scholars in the areas of audiology, hearing science, and medicine. Grades of A-F, or IP will be given. Up to 3 credit hours

### **AUSP 8112 - Sem Audiology**

**Credit Hours:** (3) **Description** Detailed study of selected topics in audiology. With different content, may be repeated for up to 6 hours at the 7000 level or 12 hours at the 8000 level. **PREREQUISITE(S):** permission of instructor.

### **AUSP 8113 - Intro to Audiologic Rehab**

**Credit Hours:** (3) **Description** Roles of auditory, visual, and bisensory cues in communication: effects of hearing impairment on speech and language development; communication strategies; psychology of deafness and deaf culture; prosthetic devices. **PREREQUISITE(S):** AUSP 8101,AUSP 6106,AUSP 7106 or permission of instructor.

### **AUSP 8114 - Intro Hearing Aids**

**Credit Hours:** (3) **Description** Performance and measurement of wearable hearing aids; characteristics of hearing aids, standard and nonstandard hearing aid performance measurements, earmold acoustics, laboratory exercises. **PREREQUISITE(S):** AUSP 7101 or permission of instructor.

### **AUSP 8115 - Pediatric Audiology**

**Credit Hours:** (3) **Description** Audiologic procedures in pediatric assessment; special test techniques for hospital and school settings and central auditory processing; hearing loss due to birth defects. **PREREQUISITE(S):** AUSP 8020,AUSP 8103, or permission of instructor. **COREQUISITE(S):** AUSP 8104

### **AUSP 8116 - Hearing Aid Provision**

**Credit Hours:** (3) **Description** Examination of multi-step process of hearing aid provision for children and adults; covers theoretical bases and practical implementations with contemporary hearing aids; laboratory exercises required. **PREREQUISITE(S):** AUSP 7114/AUSP 8114 or permission of instructor.

### **AUSP 8117 - Individual Study/Audiol**

**Credit Hours:** (3) **Description** Directed topics include physics of sound, hearing loss, basic audiometric testing and hearing conservation. Grades of A-F, or IP will be given.

### **AUSP 8118 - Electrophys Assessmnt**

**Credit Hours:** (3) **Description** Methods for assessing auditory system integrity from the periphery through the central nervous system using evoked bioelectric signals; normal and disordered function will be examined. **PREREQUISITE(S):** AUSP 8020,AUSP 8103 or permission of instructor.

### **AUSP 8119 - Hearing Conservation**

**Credit Hours:** (2) **Description** Includes study of the effects of noise on people, noise measurement and control, federal regulations/standards, and hearing conservation. **PREREQUISITE(S):** AUSP 8012 or permission of instructor.

### **AUSP 8121 - Ind Proj Audiology**

**Credit Hours:** (1-6) **Description** Students pursue individual research projects under the direction of a member of the graduate faculty in audiology. May be repeated for a maximum of 6 credit hours. Grades of A-F, or IP will be given.

### **AUSP 8124 - Clinical Educ Comm Disorders**

**Credit Hours:** (1-3) **Description** Practical experience in clinical education and supervision of student clinicians in areas of audiology and speech-language pathology.

**PREREQUISITE(S):** Permission of instructor. Grades of A-F, or IP will be given.

### **AUSP 8125 - Clinical Extrnshp Audio**

**Credit Hours:** (2-6) **Description** Fourth year clinical placement. Minimum of two credits in each of three semesters. Placement site selected in coordination with Director of Clinical Services in Audiology; approval of Director of Graduate Studies required. **PREREQUISITE(S):** Successful completion of written and oral comprehensive examination.

### **AUSP 8127 - Adult Audiologic Rehab & Aging**

**Credit Hours:** (3) **Description** Study of qualitative and quantitative methods to assess communicative function in adult individuals with hearing impairment; use of assessment tools for identifying intervention goals and for measuring outcomes; review and evaluation of current rehabilitative programs and strategies. **PREREQUISITE(S):** AUSP 7101/AUSP 8101 and AUSP 7104/AUSP 8104 (3 hours), or permission of instructor.

### **AUSP 8128 - Evidenc-Based Pract Ampl**

**Credit Hours:** (3) **Description** Seminar emphasizing the principles of evidence-based practice, with applications in recent literature concerning effectiveness of amplification-based approaches to audiological rehabilitation.

**PREREQUISITE(S):** AUSP7116/AUSP 8116.

### **AUSP 8129 - Psychosoc Adj Hrng Impr**

**Credit Hours:** (3) **Description** Seminar on facilitation of psychosocial and behavioral adjustment to hearing impairment

and impact of cognitive status, general health and stigma on functional communication and social interaction of aging adults and their families; emphasis on exploration of appropriate counseling skills and strategies in both individual and group settings.

### **AUSP 8130-8139 - Special Topics in Audiology and Speech Pathology**

**Credit Hours:** (3) **Description** Topics are varied and announced in online class listings.

### **AUSP 8200 - Ind Read Sp Path**

**Credit Hours:** (1-6) **Description** Directed independent study of literature in an area of speech pathology. May be repeated as often as desired. Grades of A-F, or IP will be given. Standard with IP

### **AUSP 8201 - Clft Pilate/Craniofcl Dis**

**Credit Hours:** (3) **Description** Cleft palate speech with emphasis on articulatory, resonance, and phonatory aspects as well as medical and habilitative and rehabilitative principles.

**PREREQUISITE(S):** AUSP 7003 and AUSP 7200 or permission of instructor.

### **AUSP 8202 - Motor Speech Dis/Child**

**Credit Hours:** (3) **Description** Speech deficits attributable to developmental neuromuscular disorder; etiologies and classifications of cerebral palsy, hormonal disturbances, myopathologies, and various genetic disorders; review of contemporary approaches to diagnosis and management of developmental dysarthria and apraxia; special problems associated with treating profoundly- and multiply-handicapped child. **PREREQUISITE(S):** AUSP 7003/AUSP 8003 and AUSP 7010/AUSP 8010 or permission of instructor.

### **AUSP 8203 - Voice Disorders**

**Credit Hours:** (3) **Description** In depth review of voice disorders by patterns of deviation, etiology, and techniques of intervention. Opportunity for original papers and/or projects.

**PREREQUISITE(S):** AUSP 7003/AUSP 8003 or permission of instructor.

### **AUSP 8204 - Phonological Disorders**



**Credit Hours:** (3) **Description** Current research in disorders of phonology and articulation, including assessment, production, and remediation procedures.

### **AUSP 8205 - Fluency Disorders**

**Credit Hours:** (3) **Description** A discussion of the nature, assessment, and treatment of fluency problems including developmental stuttering, cluttering, and acquired fluency disorders. Clinical rationales and protocols for children, adolescents, and adults are presented along with a review of the critical variables that contribute to a successful therapeutic outcome.

### **AUSP 8206 - Dev & Acquired Motor Spch Dis**

**Credit Hours:** (3) **Description** Advanced study of the neurological and speech production characteristics associated with the dysarthrias and apraxia of speech that occur across the lifespan. This course will also provide students with strategies and tools for the assessment, differential diagnosis, classification, and interdisciplinary clinical management of these speech disorders in children and adults.

**PREREQUISITE(S):** AUSP 7003/AUSP 8003 and AUSP 7010/AUSP 8010 permission of instructor.

### **AUSP 8207 - Clinical Instrumentation**

**Credit Hours:** (1-3) **Description** Principles and procedures for measurement of speech and voice function and dysfunction; standardization, validity, and reliability of instrumental procedures; hands-on experience with acquisition and interpretation of acoustic and physiologic data for speech pathologies.

### **AUSP 8208 - Clin Exp Spch Lang Path**

**Credit Hours:** (1-3) **Description** Supervised clinical practice with clients. Designed to meet student's individual needs. May be repeated as often as desired. Permission from the Director of Clinical Services in Speech-Language Pathology is required. Grades of A-F, or IP will be given.

### **AUSP 8209 - Dysphagia/Related Disor**

**Credit Hours:** (3) **Description** Anatomy and physiology of normal deglutition; nature and characteristics of swallowing disorders; methods of evaluation and management of dysphagia in adults and children; and consideration of medical conditions such as aspiration pneumonia, tracheostomy, and

other complicating factors associated with dysphagia.

**PREREQUISITE(S):** AUSP 7003/AUSP 8003 and AUSP 7010/AUSP 8010 or permission of instructor.

### **AUSP 8210 - Sem Speech Pathology**

**Credit Hours:** (1-3) **Description** Selected areas of speech or language disorders. With different content, may be repeated for up to 6 hours at the 7000 level or for up to 12 hours at the 8000 level.

### **AUSP 8212 - Autism Spect Disord/Rel Disabl**

**Credit Hours:** (3) **Description** Review of characteristics and etiology of autism spectrum disorders, including strategies for language and communication evaluation, assessment, and intervention with children, adolescents and adults with autism spectrum disorders and related severe communicative disabilities.

### **AUSP 8214 - Advanced Clinical Laboratory**

**Credit Hours:** 1-3 **Description** This course provides students with advanced theoretical knowledge and practical skills required in specialty clinics and helps students connect didactic and practical aspects of advanced clinical practice. \$35 per credit hour 3 **PREREQUISITE(S):** *Permission of instructor (student must have completed the relevant required didactic course or be concurrently enrolled in the relevant course).*

### **AUSP 8221 - Ind Proj Sp Path**

**Credit Hours:** (1-6) **Description** Students pursue individual research projects under the direction of a member of the graduate faculty in speech pathology. May be repeated as often as desired. Grades of A-F, or IP will be given.

### **AUSP 8300 - Lang Dis In Children**

**Credit Hours:** (3) **Description** Perceptual, social, and cognitive correlates of language disorders associated with specific language impairment, phonological disorders, mental retardation, autism, and hearing impairment; assessment, diagnosis, and treatment of language disorders in young children (0ars).

### **AUSP 8302 - Lang Disorders/Adults I**

**Credit Hours: 3** **Description** This course addresses communicative and cognitive deficits associated with focal and non-focal neurological disease; differential diagnosis, assessment, and management of adults with aphasia and right hemisphere communication disorders and other acquired language disorders. \$25 per credit hour

**PREREQUISITE(S):** AUSP 7003 /AUSP 8003 and AUSP 7010/AUSP 8010 or permission of the instructor.

### **AUSP 8303 - Lang Disorders/Adults II**

**Credit Hours: (3)** **Description** Communicative and cognitive deficits associated with nonfocal neurological disease; differential diagnosis, assessment, and management of individuals with traumatic brain injury, dementia, and other disorders. **PREREQUISITE(S):** AUSP 7003/AUSP 8003 and AUSP 7010/AUSP 8010 or permission of instructor

### **AUSP 8304 - Sem Lang Disorders**

**Credit Hours: (1-3)** **Description** Detailed study of selected topics in language disorders in children and adults. With different content, may be repeated for up to 6 hours at the 7000 level or 12 hours at the 8000 level.

**PREREQUISITE(S):** Permission of instructor.

### **AUSP 8305 - Language Learning Disabilities**

**Credit Hours: (3)** **Description** Assessment and treatment of spoken and written language disorders in school-age children and adolescents with special emphasis on the collaborative role of the speech-language pathologist in school-based settings; attentional and social deficits associated with language-learning disabilities.

### **AUSP 8308 - Augmentative/Alternatv Comm**

**Credit Hours: (3)** **Description** Comprehensive overview of theoretical and practical issues related to use of augmentative and alternative communication (AAC) systems; assessment and intervention strategies for children and adults in need of AAC.

### **AUSP 8309 - Sp Rehab/Head-Neck Path**

**Credit Hours: (3)** **Description** Etiology, disordered anatomy, and physiology resulting from cancer of head and neck; ways in which cancer, surgery, and other medical treatments affect

speech and voice functioning and swallowing; diagnostic and treatment approaches.

### **AUSP 8400 - Teaching Experience**

**Credit Hours: (1-3)** **Description** Mentored university teaching experience as either an assistant to an instructor of record or as instructor of an undergraduate course offered by the School of Communication Sciences and Disorders.

**PREREQUISITE(S):** Approval from the PhD student's Planning Committee. Grades of S/U, or IP will be given.

### **AUSP 8505 - Interprofessional Educ & Pract**

**Credit Hours: (1-3)** **Description** Provides Interprofessional Education and Practice (IPE/IPP) training focused on communication and collaboration through team-based approaches to the planning and delivery of person-centered care. Students learn IPE/IPP principles, review case studies, and engage in clinic- and community-based IPE/IPP experiences. Grades of S,U, or I will be given.

### **AUSP 8514 - Cognitive Science Seminar**

**Credit Hours: (3)** *Cross listing* PHIL 8514, COMP 8514, PSYC 8514 **Description** Systematic study of current topics in Cognitive Science with an emphasis on its interdisciplinary nature. Topics will vary each semester. Only nine credit hours may be counted toward degree requirements.

### **AUSP 8515 - Scientific Ethics and Responsible Conduct in Research**

**Credit Hours: 2** **Description** This course will identify ethical issues surrounding the responsible conduct of scientific research and involve students in the discussion of cases from a range of disciplines. The course is appropriate for any student of the natural, social, engineering, or data-based sciences, and satisfies the NIH and NSF training requirements for responsible conduct in research. **PREREQUISITE(S):** None **COREQUISITE(S):** None

### **AUSP 8999 - Predoctoral Practicum**

**Credit Hours: (0)**

### **AUSP 9000 - Dissertation**

**Credit Hours:** (1-12) **Description** Academic credit for dissertation may be taken for a maximum of 12 hours and a minimum of 1 hour credit. Only 9 credits may be applied toward degree requirements for the PhD degree. Grades of S, U, or IP will be given.

## Computer Science

### COMP 6001 - Intro to Python Programming

**Credit Hours:** (3) **Description** Basic concepts in computer programming. Incorporates object oriented concepts, variables, flow control statements, arrays and lists, debugging and testing. NOTE: This course may not be used to fulfill requirements for the Computer Science major or Computer Science minor **PREREQUISITE(S):** permission of instructor.

### COMP 6005 - Web Design/Development

**Credit Hours:** (3) **Description** Web interface development using HTML, XML, CSS, JavaScript, and AJAX ; technological issues in web page design and data visualization; web servers and their features; web services. NOTE: This course may not be used to fulfill requirements for the Computer Science major or Computer Science minor. NOTE: This course may not be used to fulfill requirements for the Computer Science major or Computer Science minor **PREREQUISITE(S):** COMP 6040 or COMP 6041, or permission of instructor.

### COMP 6014 - Intro Java Programming

**Credit Hours:** (3) **Description** Java problem-solving strategies with emphasis in fundamental programming skills, primitive data types, control structures, arrays, strings, I/O, basic recursion, documentation, testing and debugging techniques; introduction to object-oriented concepts. NOTE: This course may not be used to fulfill degree requirements. NOTE: This course may not be used to fulfill degree requirements. **PREREQUISITE(S):** Knowledge of a programming language and descriptive statistics, or equivalent, or permission of instructor.

### COMP 6016 - Java Prog For Teachers

**Credit Hours:** (3)

### COMP 6019 - Competitive Prog/Tech Interview

**Credit Hours:** (1) **Description** Covers skills needed for participating in programming competitions and for whiteboard-coding interviews at large tech companies. Topics include practicing with online judges, applying known algorithms and standard library data structures, common problem categories, implementation strategies, and mock interviews. (Fall) **PREREQUISITE(S):** COMP 2150 or permission of instructor.

### COMP 6030 - Design/Analysis Algorithms

**Credit Hours:** 3 Former: 6030 **Description** Asymptotic behavior of programs; basic paradigms in algorithm design: greedy, divide-and-conquer, dynamic programming; analysis of efficiency, and optimality of representative algorithms, including graph, pattern matching, numerical, randomized, and approximation algorithms; approaches to lower bound analysis; basic parallel algorithms. NOTE: Computer Science majors may not use this course to fulfill degree requirements. NOTE: Computer Science majors may not use this course to fulfill degree requirements **PREREQUISITE(S):** COMP 2150 or COMP 4001, and COMP 2700, or permission of instructor.

### COMP 6040 - Programming Languages

**Credit Hours:** (3) **Description** Comparative features, syntax, and applicability of high-level programming languages such as FORTRAN, PASCAL, LISP, Scheme, ADA, C, C++, Java, PHP, JavaScript, Perl, Prolog, and FORTH data types, data structures, and dataflow; procedures, recursion, runtime environment, string manipulation, list processing, array processing, documentation, programming style. NOTE: Computer Science majors may not use this course to fulfill degree requirements. NOTE: Computer Science majors may not use this course to fulfill degree requirements **PREREQUISITE(S):** COMP 2150 and COMP 7212 or permission of instructor.

### COMP 6041 - Intro To Compilers

**Credit Hours:** (3) **Description** Finite state recognizers, lexical scanners, symbol tables, context-free methods such as recursive descent, LL(K), precedence, LR(K), SLR(K); language translation, generation and improvement of machine independent codes, inherited and synthesized attributes syntax directed translation schema. **PREREQUISITE(S):** COMP 8272 or permission of instructor.

### COMP 6118 - Introduction to Data Mining

**Credit Hours:** (3) **Description** an introductory exploration of data mining. Topics include data preparation and preprocessing; association rules; classification; clustering; dimension reduction; recommendation engines; mining social network graphs. **PREREQUISITE(S):** COMP 6601 or permission of instructor.

### COMP 6151 - Intro to Data Science

**Credit Hours:** 3 **Description** A hands-on and programming-intensive introduction to data science and applications of data mining and machine learning techniques to analyze real data sets. Specific topics include data collection, cleaning, manipulation, and visualization, clustering and developing models to make predictions, and ethical aspects of data science. **PREREQUISITE(S):** COMP 2150, and MATH 4614 or MATH 4635; or permission of instructor.

### COMP 6242 - Intro Computer Graphics

**Credit Hours:** (3) **Description** Characteristics of graphics I/O devices; 2D/3D transformation including scaling, translation, and rotation; graphics pipeline; data structures for graphics; geometry representation; OpenGL programming; vertex processing; lighting and shading; rasterization including line and polygon drawing; ray casting; ray tracing; computer graphics in games; visualization. **PREREQUISITE(S):** COMP 7712 or permission of instructor.

### COMP 6270 - Operating Systems

**Credit Hours:** 3 Former: 6270 **Description** Hierarchy of storage devices, I/O buffering, interrupts, channels; processor and job scheduling, memory management: paging, segmentation, and virtual memory; interrupt procedure calls; multiprogramming, data races in shared resources, semaphores, concurrency, management of asynchronous processes and synchronization; security and recovery procedures. It is recommended that students take COMP 3410 before taking this course. **PREREQUISITE(S):** COMP 2150, or permission of instructor.

### COMP 6272 - System Admin and Unix Prog

**Credit Hours:** (3) **Description** Fundamental of UNIX and operating systems principles; scripting; principles and practices of systems administration and management; network file systems; account management; OS installation; startup and shutdown, booting, backup, restore; system administration tools; web administration; duties and responsibilities of a system administrator. **PREREQUISITE(S):** COMP 3825, or permission of instructor.

### COMP 6302 - Web Service/Internet

**Credit Hours:** (3) **Description** Design and implementation of Web services, including Internet architecture and protocol layering; client-server application design; peer-peer application design; World Wide Web programming using HTML, XML, Java, and advanced scripting languages; security issues. **PREREQUISITE(S):** COMP 7612.

### COMP 6310 - Wireless Mobile Comp

**Credit Hours:** (3) **Description** Internet architecture and design, IPv4 and IPv6, routing algorithms, TCP congestion control, peer-to-peer applications, wireless LAN, mobile IP, mobile ad hoc networks, wireless sensor networks. **PREREQUISITE(S):** COMP 6310 and COMP 7120 or permission of instructor.

### COMP 6410 - Computer Security

**Credit Hours:** (3) **Description** Computer security; confidentiality, integrity, availability, methods and protocols in cryptography, digital signature, authentication, bit commitment; security in computing, programs, databases, operating systems; secure communication, secure channel, public key infrastructure, certificates; digital evidence, forensics tools; monitor and response; legal and ethical issues; risk management, security administration. **PREREQUISITE(S):** Permission of instructor.

### COMP 6420 - Network and Mobile Security

**Credit Hours:** (3) **Description** Security issues and solutions in wireless and mobile networks.

### COMP 6430 - Digital Forensics

**Credit Hours:** (3) **Description** Introduces the process of forensic investigation, chain of custody, forensics analysis, court proceedings and the legal justice system including examination of digital storage and network traffic from personal computers, enterprise systems, embedded devices, and mobiles.

### COMP 6432 - Secure Coding & Testing

**Credit Hours:** (3) **Description** Secure programming practices necessary to develop applications against attacks and exploits.

## COMP 6480 - Introduction to Natural Language Processing

**Credit Hours:** 3 **Description** Fundamental concepts and techniques of statistical machine learning approaches to natural language processing. Topics include probability and statistics, language and classification models, syntax, parsing and semantics, topic models, information extraction, question answering, dialog and fairness, applications of neural models. **PREREQUISITE(S):** COMP 2150 or COMP 4001

## COMP 6517 - Introduction to Human Computer Interaction

**Credit Hours:** 3 **Description** How do we design interfaces and digital systems that users are excited to interact with? How do we analyze or evaluate the systems we create? In this course, students will learn user-centered research methods for data collection, data analysis, system design and prototyping through a series of team projects. Standard Letter

## COMP 6601 - Models Of Computation

**Credit Hours:** (3) **Description** Computer models as a basis of the understanding and analysis of programming: computation and complexity: machine models (finite-state, stack and Turing machines), linguistic models (grammars, lambda calculus, and predicate calculi); biologically-inspired models (e.g.: neural nets or genetic algorithms); unsolvability, universality, decidability, and feasibility. NOTE: Computer Science majors may not use this course to fulfill degree requirements. NOTE: Computer Science majors may not use this course to fulfill degree requirements **PREREQUISITE(S):** COMP 6601 or permission of instructor.

## COMP 6720 - Intro Artificial Intlg

**Credit Hours:** (3) *Cross listing* (Same as EECE 6720.) **Description** Fundamentals of programming in LISP; central ideas of artificial intelligence, including heuristic search, problem solving, slot-and-filler structures and knowledge representation. **PREREQUISITE(S):** COMP 2150 or permission of instructor.

## COMP 6730 - Expert Systems

**Credit Hours:** (3) *Cross listing* (Same as EECE 6730.) **Description** (Same as EECE 6730.) Fundamentals of programming in PROLOG, central ideas of expert system development, including knowledge representation, control

structures, tools, knowledge acquisition, and knowledge engineering. **PREREQUISITE(S):** COMP 6601 or permission of instructor.

## COMP 6731 - Data Analytics and Visualization

**Credit Hours:** (3) *Cross listing* (Same as EECE 6731) **Description** Terminology, methodology, and applications of data visualization; methods for visualizing data from a variety of engineering and scientific fields including both static and time varying data and methods for generating both surface and volume visualizations. **PREREQUISITE(S):** COMP 6030, or permission of instructor.

## COMP 6741 - Intro to Neural Networks

**Credit Hours:** 3 Former: 6741 *Cross listing* EECE 4741, EECE 6741 **Description** The course aims to explore neural network models and deep learning algorithms enabled by increased computational power and larger data sets. Case studies will be described in various applications to practical problems in various domains such as data analysis, forecasting, decision making and, more recently, modeling complex phenomena. Students will get hands on experience on software platforms to solve a significant problem in a term project of their choice. **PREREQUISITE(S):** COMP 2150 and MATH 3242, or permission of instructor. Standard Letter

## COMP 6745 - Intro to Machine Learning

**Credit Hours:** (3) **Description** Overview of machine learning. Hypotheses spaces, concept learning, supervised, unsupervised and reinforcement learning; classification and clustering; Bayesian methods; active learning. **PREREQUISITE(S):** COMP 2150 or permission of instructor.

## COMP 6882 - Capstone Software Proj

**Credit Hours:** (3)

## COMP 6901 - Ind Study Computer Sci

**Credit Hours:** (1-3) **Description** Directed individual study of selected areas of computer science. Repeatable by permission to 6 semester hours. Repeatable by permission to 6 semester hours **PREREQUISITE(S):** COMP 7712 or permission of instructor.

## COMP 6911 - Internshp Com Science

**Credit Hours:** (1-6) **Description** Practical experience in computer science; students are placed with governmental or private organizations; project must be approved and supervised by department faculty; academic credit granted on certification of cooperating agency and acceptance by the supervising faculty of written report. May be repeated for total of 6 semester hours credit. May be repeated for total of 6 semester hours credit **PREREQUISITE(S):** COMP 7713 or permission of instructor.

### COMP 6990-6999 - Special Topics in Computer Science

**Credit Hours:** (0) **Description** Topics vary by semester, see online class schedule listing.

### COMP 6990-6999 - Topics in Computer Science

**Credit Hours:** (1-3) **Description** Topics are varied and announced in the online course listing **PREREQUISITE(S):** COMP 7116 or permission of instructor.

### COMP 7012 - Fndtns/Software Engr

**Credit Hours:** (3) *Cross listing* (Same as EECE 7012-EECE 8012) **Description** (Same as EECE 7012-8012). Covers project management; software disciplines (requirements, analysis, design, implementation, testing); software modeling notations; mapping designs to code. Students work in teams to develop a significant software system. **PREREQUISITE(S):** COMP 7713 or COMP 7715 or permission of instructor.

### COMP 7041 - Compiler Design

**Credit Hours:** (3) **Description** Translation of computer source language--including compiling of interpreters, scanning, and code generation--for arithmetical and Boolean expressions, arrays, conditional and iterative statements using recursive and nonrecursive compiling techniques; construction of automated compiler given a source language in form of a context-free grammar and a target in the form of actions to be performed when rules of grammar are satisfied. **PREREQUISITE(S):** COMP 6720.

### COMP 7081 - Software Engr Methodologies

**Credit Hours:** (3) **Description** Common software engineering methodologies, such as waterfall, prototyping, iterative and incremental development, spiral development, rapid application development, and extreme programming;

advanced object-oriented analysis and design methods, reuse, and testing. **PREREQUISITE(S):** COMP 6030, or permission of instructor.

### COMP 7083 - Engineering Secure Software

**Credit Hours:** (3) **Description** Development of secure software systems; writing secure code; vulnerability detection; limiting the impact of security vulnerabilities, balancing security properties (confidentiality, integrity, availability); cryptography concepts, trust versus trustworthiness, attack vectors/surface, malware detection/defense, risk and threat intelligence. **PREREQUISITE(S):** COMP 7740, or permission of instructor.

### COMP 7085 - Program Comprehension

**Credit Hours:** (3) **Description** Cognitive and mental models of how people learn to program and how people understand existing large software systems; software environments to assist software developers build, maintain, and evolve software systems; how visualization of software systems aids in program comprehension. **PREREQUISITE(S):** COMP 7745 or permission of instructor.

### COMP 7087 - Topics Software ENGR

**Credit Hours:** (3) **Description** Recent theoretical and practical issues in software engineering. **PREREQUISITE(S):** COMP 7012 or permission of instructor.

### COMP 7115 - Database Systems

**Credit Hours:** (3) **Description** Review of the relational model; query processing and optimization; physical database design and tuning; transaction processing; concurrency control; crash recovery; database buffer management; database security.

### COMP 7116 - Adv Database Systems

**Credit Hours:** (3) **Description** Advanced data modeling; object-oriented and object-relational databases; indexing of complex data; advanced transaction processing; on-line analytical processing and data warehousing; distributed database processing. **PREREQUISITE(S):** COMP 7115 or COMP 8115 or permission of instructor.

### COMP 7117 - Topic Database Mgmt Sys

**Credit Hours:** (3) **Description** Advanced current research topics in database and information management, with emphasis on nontraditional data and applications.

**PREREQUISITE(S):** COMP 7713 or permission of instructor.

### COMP 7118 - Data Mining \*\*

**Credit Hours:** (3) **Description** Approaches to data mining and knowledge discovery (graphical, statistical, combinatorial, heuristic); classification and clustering; time series analysis; spatial data mining; data mining applications.

**PREREQUISITE(S):** Permission of instructor.

### COMP 7120 - Cryptography/Data Security

**Credit Hours:** (3) *Cross listing* (Same as MIS 7670-MIS 8670) **Description** (Same as MIS 7670-8670). Ancient and modern cryptology and ciphers; security problems in computing; basic encryption and decryption; public-key cryptography, notions of security in computing environments; encryption, protocols; security for programs, OSs, data bases, PCs, networks and communication; legal, ethical and human factors in computer security.

### COMP 7125 - Computer Forensics

**Credit Hours:** (3) **Description** Societal and legal impact of computer activity: computer crime, intellectual property, privacy issues, legal codes; risks, vulnerabilities, and countermeasures; methods and standards for extraction, preservation, and deposition of legal evidence in a court of law.

### COMP 7130 - Inform Retrieval/Web Search

**Credit Hours:** (3) **Description** Computational aspects, algorithms, and techniques for information retrieval from large collections of documents; major topics include ad-hoc retrieval, text processing, classical models of retrieval, term-weighting schemes, query operations, web search, text categorization, and text classification.

### COMP 7150 - Fundamentals of Data Science \*\*

**Credit Hours:** (3) **Description** The data life cycle; data collection, cleansing, visualization and storage; methods and models for data analysis and management; analysis tools, including statistical packages, experimental design software

tools and computer simulations; evaluation and deployment of results; ethical and societal factors.

### COMP 7212 - Operating/Distrib Sys

**Credit Hours:** (3) **Description** Overview of operating system architecture for centralized and distributed systems; storage device and file systems; process management, scheduling, synchronization, interprocess communications and security; case studies of selected operating systems.

### COMP 7272 - Parallel Computing

**Credit Hours:** (3) **Description** Introduction to parallel and distributed computing; various aspects of parallel programming including architecture, communication, algorithms, performance, and programming; distributed computing architectures such as client-server and CORBA; synchronization, replication, and distributed file systems; benchmark applications.

### COMP 7274 - Topics Distrib Computng

**Credit Hours:** (3) *Cross listing* (COMP 8274). **Description** Introduction to selected modern topics in distributed computing, concurrency and parallelism with applications drawing from selected areas and platforms including cloud computing, cluster, web, mobile and wearable devices.

### COMP 7282 - Evolutionary Computation

**Credit Hours:** (3) **Description** Computational implementation of biological analogies, such as genetic algorithms, genetic programming, embryonics, evolutionary engineering; representation, fitness functions, fitness landscapes, automatically defined functions; applications to optimization, machine learning, software development. Grades of S, U, or IP will be given.

### COMP 7290 - Molecular Computing

**Credit Hours:** (3) *Cross listing* (Same as MMCS 7290-8290) **Description** (Same as MMCS 7290-8290). Basics of cell biology and genetics (DNA structure and enzymes, replication and translation); feasible DNA-based solution of hard computational problems; issues in the design of molecular computers; foundations of nanotechnology.

### COMP 7295 - Algorithms Comp Biol/Bioinform

**Credit Hours:** (3) **Description** Algorithms for problems arising in molecular biology, such as sequence matching, alignment, gene finding, sequence assembly, phylogeny, and structure prediction; internet resources; statistical analysis of DNA, RNA, and protein sequences.

### COMP 7311 - Adv Computer Networks

**Credit Hours:** (3) **Description** Internet architecture and layering; intra-domain and inter-domain routing protocols; congestion control; network QoS; peer-to-peer networks; overlay networks; wireless and sensor networks.

### COMP 7313 - Network Model/Perf Analysis

**Credit Hours:** (3) **Description** Mathematical modeling of networking problems; proving correctness of networking algorithms; applying optimization techniques to solving networking problems; deriving deterministic bounds on performance (approximation factors) for hard networking systems; deriving probabilistic guarantees on the performance of networking systems.

### COMP 7327 - Network/Internet Secrty

**Credit Hours:** (3) **Description** Concepts of network security; survey of security software packages; security in Java; intrusion-detection systems; current security issues on Internet and electronic commerce. Grades of S, U, or IP will be given.

### COMP 7514 - Cognitive Science Seminar

**Credit Hours:** (3) *Cross listing* (same as COMP 8514, AUSP 8514, PHIL 7514 - PHIL 8514, PSYC 7514 - PSYC 8514). **Description** Systematic study of current topics in Cognitive Science with an emphasis on its interdisciplinary nature. Topics will vary each semester. Repeatable. Grades of S, U, or IP will be given.

### COMP 7515 - Complex Systems Sem

**Credit Hours:** (3) **Description** Systematic study of information processing, broadly construed, natural or artificial, occurring in complex systemic interactions, such as those encountered in dynamical, neural, biological, social, evolutionary, and cyberspatial systems.

### COMP 7517 - Human/Comptr Interact \*\*

**Credit Hours:** (3) **Description** Facts, theories, and issues about human sensation, perception, and interaction for

developing more ergonomic and human-like computer interfaces; interactive platforms in use or under development.

### COMP 7601 - Topics Discrete Modelng

**Credit Hours:** (3) **Description** Application of computer models to problem solving in natural language processing, decision making, pattern recognition, image processing, and phenomena in physics, chemistry and biology.

### COMP 7612 - Foundations of Computing

**Credit Hours:** (3) **Description** Review of basic models of computation and complexity; measures and modes of complexity analyses, both logical and experimental; deterministic and stochastic methods for program analysis and data compaction. **PREREQUISITE(S):** COMP 6601 and COMP 6030, or permission of instructor.

### COMP 7613 - Computational Complexity

**Credit Hours:** (3) **Description** Fundamental principles governing the capabilities and limitations of efficient computation; time, space, nondeterminism, and randomness; theoretical foundations of other areas of computer science such as cryptography, machine learning, and distributed computing. **PREREQUISITE(S):** COMP 7612 or COMP 4601 - COMP 6601 or permission of instructor.

### COMP 7712 - Algorithms/Prob Solv

**Credit Hours:** (3) **Description** Covers algorithms problems, techniques, and design emphasizing problem solving and implementation skills; topics include advanced data structures, graph algorithms, string matching, network flow, dynamic programming, and randomized algorithms.

### COMP 7713 - Advanced Topics Algorithms

**Credit Hours:** (3) **Description** Advanced methods and data structures in sequential algorithms, including amortized analysis, backtracking, and branch-and-bound, heuristics, randomized algorithms, derandomization, approximation, and approximability; basic parallel models and algorithms, including sorting and searching, numerical, symbolic, and probabilistic algorithms.

### COMP 7717 - Topics In Algorithms

**Credit Hours:** (3) **Description** Recent developments and practical issues in algorithms and data structures.



## COMP 7719 - Combinatorial Optimiztn

**Credit Hours:** (3) **Description** Computational complexity: reductions, oracles and NP-completeness; five basic problems on convex sets in Euclidean spaces; pivoting, ellipsoid, and basis reductions methods; optimization on graphs; matching and stable set polytopes; algorithms on perfect graphs.

## COMP 7720 - Artificial Intelligence

**Credit Hours:** (3) *Cross listing* (Same as EECE 7720-EECE 8720) **Description** (Same as EECE 7720-8720). Central issues of artificial intelligence, including game playing, planning, machine learning, common-sense reasoning, perception and action; implementations in LISP.

## COMP 7740 - Neural Networks

**Credit Hours:** (3) *Cross listing* (Same as EECE 7740-EECE 8740) **Description** (Same as EECE 7740-8740). Learning algorithms for multilayer perceptrons, least-mean squares, backpropagation and its variants, cascade-correlation, other supervised learning algorithms; unsupervised methods, including Hebbian, competitive, and reinforcement learning; applications to associative memories, combinatorial optimization, component analysis, function approximation, pattern classification; theory of neurodynamics, including equilibrium, stability, and computational power.

## COMP 7745 - Machine Learning \*\*

**Credit Hours:** (3) **Description** An introduction to machine learning: hypothesis spaces, formation and evaluation; concept learning, decision trees, linear regression and perceptrons; graphical models (naïve Bayes, Bayes Nets, Hidden Markov Models); computational learning theory; Support Vector Machines; instance-based learning. Grades of S, U, or IP will be given.

## COMP 7747 - Adv Topics in Machine Learning

**Credit Hours:** (3) **Description** Advanced concepts in machine learning, including: inference and learning in graphical models, reinforcement learning, Markov decision processes, active learning, unsupervised learning, deep learning, autoencoders, Boltzmann machines.

## COMP 7760 - Control Auto Agents

**Credit Hours:** (3) **Description** Exploration and current applications of nontraditional control methods for design of autonomous agents, both in hardware and software, capable of operating in unusual and complex environments, such as subsumption architectures, adaptive fuzzy systems and software agents; novel learning and action selection paradigms. Grades of S, U, or IP will be given.

## COMP 7770 - Knowledge Rep/Reason

**Credit Hours:** (3) **Description** Focuses on long-standing issues of knowledge representation, including ontologies; knowledge structures; and representing events, actions, time, space, geometry, and common-sense knowledge. Student will complete a project using declarative language. Grades of S, U, or IP will be given.

## COMP 7780 - Natural Lang Processng

**Credit Hours:** (3) *Cross listing* (Same as PSYC 7221-PSYC 8221) **Description** (Same as PSYC 7221-8221). Computational aspects, algorithms, and techniques for human language processing; topics include lexical analysis, syntactic parsing, semantics, word sense disambiguation, logic forms, dialog, and pragmatics; applications include question answering and information extraction among others. Grades of S, U, or IP will be given.

## COMP 7820 - Pci Algrthms/Mach Visn

**Credit Hours:** (3) **Description** Image formation and sensing in vision systems; basic algorithms for processing continuous and discrete images; edge detection; shape detection vs. brightness, lightness, shading, and color; reflectance maps; stereoscopic systems; pattern classification; representation problems; basic concepts and applications of computational geometry; passive navigation and motion planning.

## COMP 7900 - Cyber Ethics

**Credit Hours:** (3) **Description** Issues, concepts, and frameworks for cyber ethics: privacy, intellectual property, professionalism, code of ethics and professional practices, software developers' obligations to different stakeholders, freedom of speech on Internet; case studies of ethical tradeoffs in technical decisions. (Offered alternate years)

## COMP 7901 - Ind Studies COMP SCI

**Credit Hours:** (1-9) **Description** Directed independent problem research and program design, writing, and

documentation in an area selected by student with approval of both adviser and supervising staff members. Repeatable by permission. **PREREQUISITE(S):** Permission of instructor.

### **COMP 7950 - Research Methods for Computer Science**

**Credit Hours:** 3 **Description** Learning to conduct research is an essential skill for PhD students. This course will provide an introduction to computing research in this department, and opportunities to practice primary research skills such as finding and reading research papers, synthesizing prior work, writing literature reviews, and presenting research to others. Students will pick their own research topic, and work in teams with others of similar research interests.

### **COMP 7960 - Sem Teaching/Res/Consult**

**Credit Hours:** (3) **Description** Non-traditional setting in which masters students develop skills in areas of teaching, research, and consulting. Required of all graduate assistants in the department. NOTE: Computer Science majors may not use this course to fulfill degree requirements. NOTE: Computer Science majors may not use this course to fulfill degree requirements. **PREREQUISITE(S):** PSYC 7215/PSYC 8215.

### **COMP 7980 - Master's Project**

**Credit Hours:** (1-3) **Description** Research for specific projects under the supervision of a faculty member and possibly a liaison from commerce or industry. Each section of this class will be designated for a special area. Offered alternate years.

### **COMP 7990-7999 - Special Topics in Computer Science**

**Credit Hours:** (0) **Description** Topics vary by semester, see online class schedule listing.

### **COMP 7996 - Thesis \*\***

**Credit Hours:** (1-6)

### **COMP 8012 - Fndtns/Software Engr**

**Credit Hours:** (3) *Cross listing* (Same as EECE 7012-EECE 8012) **Description** (Same as EECE 7012-8012). Covers project management; software disciplines (requirements, analysis, design, implementation, testing); software modeling

notations; mapping designs to code. Students work in teams to develop a significant software system.

### **COMP 8041 - Compiler Design**

**Credit Hours:** (3) **Description** Translation of computer source language--including compiling of interpreters, scanning, and code generation--for arithmetical and Boolean expressions, arrays, conditional and iterative statements using recursive and nonrecursive compiling techniques; construction of automated compiler given a source language in form of a context-free grammar and a target in the form of actions to be performed when rules of grammar are satisfied.

### **COMP 8081 - Software Engr Methodologies**

**Credit Hours:** (3) **Description** Common software engineering methodologies, such as waterfall, prototyping, iterative and incremental development, spiral development, rapid application development, and extreme programming; advanced object-oriented analysis and design methods, reuse, and testing.

### **COMP 8083 - Engineering Secure Software**

**Credit Hours:** (3) **Description** Development of secure software systems; writing secure code; vulnerability detection; limiting the impact of security vulnerabilities, balancing security properties (confidentiality, integrity, availability); cryptography concepts, trust versus trustworthiness, attack vectors/surface, malware detection/defense, risk and threat intelligence.

### **COMP 8085 - Program Comprehension**

**Credit Hours:** (3) **Description** Cognitive and mental models of how people learn to program and how people understand existing large software systems; software environments to assist software developers build, maintain, and evolve software systems; how visualization of software systems aids in program comprehension. **PREREQUISITE(S)** or **COREQUISITE(S):** COUN 7411.

### **COMP 8087 - Topics Software ENGR**

**Credit Hours:** (3) **Description** Recent theoretical and practical issues in software engineering. **PREREQUISITE(S):** COMP 7012 or permission of instructor.

### **COMP 8115 - Database Systems \*\***

**Credit Hours:** (3) **Description** Review of the relational model; query processing and optimization; physical database design and tuning; transaction processing; concurrency control; crash recovery; database buffer management; database security.

### COMP 8116 - Adv Database Systems

**Credit Hours:** (3) **Description** Advanced data modeling; object-oriented and object-relational databases; indexing of complex data; advanced transaction processing; on-line analytical processing and data warehousing; distributed database processing. **PREREQUISITE(S):** COMP 7115 or COMP 8115 or permission of instructor.

### COMP 8117 - Topic Database Mgmt Sys

**Credit Hours:** (3) **Description** Advanced current research topics in database and information management, with emphasis on nontraditional data and applications.

### COMP 8118 - Data Mining \*\*

**Credit Hours:** (3) **Description** Approaches to data mining and knowledge discovery (graphical, statistical, combinatorial, heuristic); classification and clustering; time series analysis; spatial data mining; data mining applications. **PREREQUISITE(S)** or **COREQUISITE(S):** COUN 7411.

### COMP 8120 - Cryptgrphy/Data Securty

**Credit Hours:** (3) *Cross listing* (Same as MIS 7670-MIS 8670) **Description** (Same as MIS 7670-8670). Ancient and modern cryptology and ciphers; security problems in computing; basic encryption and decryption; public-key cryptography, notions of security in computing environments; encryption, protocols; security for programs, OSs, data bases, PCs, networks and communication; legal, ethical and human factors in computer security.

### COMP 8125 - Computer Forensics

**Credit Hours:** (3) **Description** Societal and legal impact of computer activity: computer crime, intellectual property, privacy issues, legal codes; risks, vulnerabilities, and countermeasures; methods and standards for extraction, preservation, and deposition of legal evidence in a court of law.

### COMP 8130 - Inform Retrieval/Web Search

**Credit Hours:** (3) **Description** Computational aspects, algorithms, and techniques for information retrieval from large collections of documents; major topics include ad-hoc retrieval, text processing, classical models of retrieval, term-weighting schemes, query operations, web search, text categorization, and text classification. **PREREQUISITE(S)** or **COREQUISITE(S):** COUN 7551.

### COMP 8150 - Fundamentals of Data Science \*\*

**Credit Hours:** (3) **Description** The data life cycle; data collection, cleansing, visualization and storage; methods and models for data analysis and management; analysis tools, including statistical packages, experimental design software tools and computer simulations; evaluation and deployment of results; ethical and societal factors.

### COMP 8212 - Operating/Distrib Sys

**Credit Hours:** (3) **Description** Overview of operating system architecture for centralized and distributed systems; storage device and file systems; process management, scheduling, synchronization, interprocess communications and security; case studies of selected operating systems.

### COMP 8272 - Parallel Computing

**Credit Hours:** (3) **Description** Introduction to parallel and distributed computing; various aspects of parallel programming including architecture, communication, algorithms, performance, and programming; distributed computing architectures such as client-server and CORBA; synchronization, replication, and distributed file systems; benchmark applications.

### COMP 8274 - Topics Distrib Computng

**Credit Hours:** (3) *Cross listing* COMP 7274 **Description** Introduction to selected modern topics in distributed computing, concurrency and parallelism with applications drawing from selected areas and platforms including cloud computing, cluster, web, mobile and wearable devices.

### COMP 8282 - Evolutionry Computation

**Credit Hours:** (3) **Description** Computational implementation of biological analogies, such as genetic algorithms, genetic programming, embryonics, evolutionary engineering; representation, fitness functions, fitness

landscapes, automatically defined functions; applications to optimization, machine learning, software development.

### COMP 8290 - Molecular Computing

**Credit Hours:** (3) *Cross listing* (Same as MMCS 7290-8290)

**Description** (Same as MMCS 7290-8290). Basics of cell biology and genetics (DNA structure and enzymes, replication and translation); feasible DNA-based solution of hard computational problems; issues in the design of molecular computers; foundations of nanotechnology.

### COMP 8295 - Algorithms Comp Biol/Bioinform

**Credit Hours:** (3) **Description** Algorithms for problems arising in molecular biology, such as sequence matching, alignment, gene finding, sequence assembly, phylogeny, and structure prediction; internet resources; statistical analysis of DNA, RNA, and protein sequences.

### COMP 8311 - Adv Computer Networks

**Credit Hours:** (3) **Description** Internet architecture and layering; intra-domain and inter-domain routing protocols; congestion control; network QoS; peer-to-peer networks; overlay networks; wireless and sensor networks.

### COMP 8313 - Ntwrk Dsgn/Perf Anlys

**Credit Hours:** (3) **Description** Mathematical modeling of networking problems; proving correctness of networking algorithms; applying optimization techniques to solving networking problems; deriving deterministic bounds on performance (approximation factors) for hard networking systems; deriving probabilistic guarantees on the performance of networking systems.

### COMP 8327 - Network/Internet Secrty

**Credit Hours:** (3) **Description** Concepts of network security; survey of security software packages; security in Java; intrusion-detection systems; current security issues on Internet and electronic commerce.

### COMP 8514 - Cognitive Science Seminar

**Credit Hours:** (3) *Cross listing* (same as COMP 7514, A USP 8514, PHIL 7514 - PHIL 8514, PSYC 7514 - PSYC 8514).

**Description** Systematic study of current topics in Cognitive

Science with an emphasis on its interdisciplinary nature.

Topics will vary each semester. Repeatable. Grades of S, U, or I will be given.

### COMP 8515 - Complex Systems Sem

**Credit Hours:** (3) **Description** Systematic study of information processing, broadly construed, natural or artificial, occurring in complex systemic interactions, such as those encountered in dynamical, neural, biological, social, evolutionary, and cyberspatial systems. Grades of S, U, or I will be given.

### COMP 8517 - Human/Compnr Interact

**Credit Hours:** (3) **Description** Facts, theories, and issues about human sensation, perception, and interaction for developing more ergonomic and human-like computer interfaces; interactive platforms in use or under development.

### COMP 8601 - Topcis Discrete Modelng

**Credit Hours:** (3) **Description** Application of computer models to problem solving in natural language processing, decision making, pattern recognition, image processing, and phenomena in physics, chemistry and biology.

### COMP 8612 - Foundations of Computing

**Credit Hours:** (3) **Description** Review of basic models of computation and complexity; measures and modes of complexity analyses, both logical and experimental; average case analysis of algorithms; information complexity and its applications to coding; deterministic and stochastic methods for data analysis and compaction, hypothesis testing, and estimation.

### COMP 8613 - Computational Complexity

**Credit Hours:** (3) **Description** Fundamental principles governing the capabilities and limitations of efficient computation; time, space, nondeterminism, and randomness; theoretical foundations of other areas of computer science such as cryptography, machine learning, and distributed computing. **PREREQUISITE(S):** COMP 8612 or COMP 4601 - COMP 6601 or permission of instructor.

### COMP 8712 - Algorithms/Prob Solv

**Credit Hours:** (3) **Description** Covers algorithms problems, techniques, and design emphasizing problem solving and

implementation skills; topics include advanced data structures, graph algorithms, string matching, network flow, dynamic programming, and randomized algorithms.

### COMP 8713 - Advanced Topics Algorithms

**Credit Hours:** (3) **Description** Advanced methods and data structures in sequential algorithms, including amortized analysis, backtracking, and branch-and-bound, heuristics, randomized algorithms, derandomization, approximation, and approximability; basic parallel models and algorithms, including sorting and searching, numerical, symbolic, and probabilistic algorithms.

### COMP 8717 - Topics In Algorithms

**Credit Hours:** (3) **Description** Recent developments and practical issues in algorithms and data structures.

### COMP 8719 - Combinatorial Optimiztrn

**Credit Hours:** (3) **Description** Computational complexity: reductions, oracles and NP-completeness; five basic problems on convex sets in Euclidean spaces; pivoting, ellipsoid, and basis reductions methods; optimization on graphs; matching and stable set polytopes; algorithms on perfect graphs.

### COMP 8720 - Artificial Intelligence

**Credit Hours:** (3) *Cross listing* (Same as EECE 7720-EECE 8720) **Description** (Same as EECE 7720-8720). Central issues of artificial intelligence, including game playing, planning, machine learning, common-sense reasoning, perception and action; implementations in LISP.

### COMP 8740 - Neural Networks

**Credit Hours:** (3) *Cross listing* (Same as EECE 7740-8740) **Description** (Same as EECE 7740-8740). Learning algorithms for multilayer perceptrons, least-mean squares, backpropagation and its variants, cascade-correlation, other supervised learning algorithms; unsupervised methods, including Hebbian, competitive, and reinforcement learning; applications to associative memories, combinatorial optimization, component analysis, function approximation, pattern classification; theory of neurodynamics, including equilibrium, stability, and computational power.

### COMP 8745 - Machine Learning \*\*

**Credit Hours:** (3) **Description** An introduction to machine learning: hypothesis spaces, formation and evaluation; concept learning, decision trees, linear regression and perceptrons; graphical models (naïve Bayes, Bayes Nets, Hidden Markov Models); computational learning theory; Support Vector Machines; instance-based learning.

### COMP 8747 - Adv Topics in Machine Learning

**Credit Hours:** (3) **Description** Advanced concepts in machine learning, including: inference and learning in graphical models, reinforcement learning, Markov decision processes, active learning, unsupervised learning, deep learning, autoencoders, Boltzmann machines.

### COMP 8760 - Control Auto Agents

**Credit Hours:** (3) **Description** Exploration and current applications of nontraditional control methods for design of autonomous agents, both in hardware and software, capable of operating in unusual and complex environments, such as subsumption architectures, adaptive fuzzy systems and software agents; novel learning and action selection paradigms.

### COMP 8770 - Knowledge Rep/Reason

**Credit Hours:** (3) **Description** Focuses on long-standing issues of knowledge representation, including ontologies; knowledge structures; and representing events, actions, time, space, geometry, and common-sense knowledge. Student will complete a project using declarative language.

### COMP 8780 - Natural Lang Processng

**Credit Hours:** (3) *Cross listing* (Same as PSYC 7221-PSYC 8221) **Description** (Same as PSYC 7221-8221). Computational aspects, algorithms, and techniques for human language processing; topics include lexical analysis, syntactic parsing, semantics, word sense disambiguation, logic forms, dialog, and pragmatics; applications include question answering and information extraction among others.

### COMP 8820 - Pci Algrthms/Mach Visn

**Credit Hours:** (3) **Description** Image formation and sensing in vision systems; basic algorithms for processing continuous and discrete images; edge detection; shape detection vs. brightness, lightness, shading, and color; reflectance maps; stereoscopic systems; pattern classification; representation

problems; basic concepts and applications of computational geometry; passive navigation and motion planning.

### COMP 8900 - Cyber Ethics

**Credit Hours:** 3 *Cross listing* COMP 7900 **Description** Issues, concepts, and frameworks for cyber ethics: privacy, intellectual property, professionalism, code of ethics and professional practices, software developers' obligations to different stakeholders, freedom of speech on Internet; case studies of ethical tradeoffs in technical decisions. (Offered alternate years)

### COMP 8901 - Ind Studies COMP SCI

**Credit Hours:** (1-9) **Description** Directed independent problem research and program design, writing, and documentation in an area selected by student with approval of both adviser and supervising staff members. Repeatable by permission. **PREREQUISITE(S):** Permission of instructor.

### COMP 8950 - Research Methods for Computer Science

**Credit Hours:** 3 **Description** Learning to conduct research is an essential skill for PhD students. This course will provide an introduction to computing research in this department, and opportunities to practice primary research skills such as finding and reading research papers, synthesizing prior work, writing literature reviews, and presenting research to others. Students will pick their own research topic, and work in teams with others of similar research interests.

### COMP 8960 - Sem Teaching/Res/Consult

**Credit Hours:** (3) **Description** Non-traditional setting in which masters students develop skills in areas of teaching, research, and consulting. Required of all graduate assistants in the department. NOTE: Computer Science majors may not use this course to fulfill degree requirements. NOTE: Computer Science majors may not use this course to fulfill degree requirements. **PREREQUISITE(S):** COUN 7541 or COUN 7542, enrollment in a COUN or CPSY degree program or permission of instructor.

### COMP 8990-8999 - Special Topics in Computer Science

**Credit Hours:** (0) **Description** Advanced topics and recent developments in computer science. Repeatable by permission

**PREREQUISITE(S):** COMP 2150 or permission of instructor.

### COMP 9000 - Dissertation

**Credit Hours:** (1-12) **Description** Independent research for the PhD degree. Grades of S, U, or IP will be given. **PREREQUISITE(S):** Enrollment in a COUN or CPSY degree program or permission of instructor.

### DATA 6911 - Internship Data Science

**Credit Hours:** 1-6 **Description** Practical experience in data science; students are placed with governmental or private organizations; project must be approved and supervised by department faculty; academic credit granted on certification of cooperating agency and acceptance by the supervising faculty of written report. May be repeated for total of 6 semester hours credit. **PREREQUISITE(S):** PREREQUISITE(S): COMP7/8150 (Fundamentals of Data Science) or equivalent or permission of instructor.

### DATA 7901 - Independent Study

**Credit Hours:** 1-6 **Description** Directed independent problem research and data-driven solution design, writing, and documentation in an area selected by student with approval of both adviser and supervising staff members. Repeatable by permission. **PREREQUISITE(S):** Permission of instructor.

### DATA 7980 - Master's project

**Credit Hours:** 1-3 **Description** Research for specific projects under the supervision of a faculty member and possibly a liaison from commerce or industry. Each section of this class will be designated for a special area. Offered alternate years. **PREREQUISITE(S):** Data Science students must do a project to graduate.

### DATA 7996 - Thesis

**Credit Hours:** 1-6 **Description** Independent research for the Master's degree. Grades of S, U, or IP will be given. **PREREQUISITE(S):** Permission of instructor.

### Consumer Science and Education

#### CCFA 6001 - Arts/Schools Institute

**Credit Hours:** (1)

### **CSED 6101 - Preschool Curriculum**

**Credit Hours:** (3) Former: (HMEC 6101). **Description** Application of child development principles to program planning; infancy through four years of age.

### **CSED 6204 - Frnshng Prblms Prsntns**

**Credit Hours:** (3) Former: (HMEC 6204). **Description** Problems in planning, coordinating, and purchasing of home furnishings. **PREREQUISITE(S):** CSED 2004, 4304.

### **CSED 6205 - Behv Sci Aspct Clothng**

**Credit Hours:** (3) Former: (HMEC 6205). **Description** Interdisciplinary study of clothing and appearance: concepts, methodologies, and applications of behavioral science to clothing.

### **CSED 6300 - Family Resource Mgmt**

**Credit Hours:** (3) Former: (HMEC 6300). **Description** Investigates values, goals, and human and material resources necessary for individuals and families to make informed management decisions throughout the life span.

### **CSED 6304 - Trnds Hsng Home Frnsh**

**Credit Hours:** (3) Former: (HMEC 6304). **Description** Major trends and influences on contemporary residential furnishings as these affect home furnishings merchandising. **PREREQUISITE(S):** CSED 2104.

### **CSED 6383 - Mat/Meth Family CSED**

**Credit Hours:** (3) Former: (HMEC 6383). **Description** Methods in high school subjects with an emphasis in Consumer Science and Education instruction; open to graduate or transfer students seeking update or initial certification. **PREREQUISITE(S):** Permission of instructor.

### **CSED 6393 - Occp Meth Family CSed**

**Credit Hours:** (3) Former: (HMEC 6393). **Description** Special emphasis on instructional strategies and evaluation through classroom and on-site participation. **PREREQUISITE(S):** CSED 4383 or CSED 6383 and permission of instructor.

### **CSED 6405 - Textiles**

**Credit Hours:** (3) Former: (HMEC 6405). **Description** Selection, use, and care of textiles related to properties of fibers, yarn structures, fabric construction, and finishes; morphology and chemistry of fibers, finishes, dyes, fabric maintenance, and procedure involved in fiber, yarn, and fabric identification.

### **CSED 6900 - Study Tour: CSed**

**Credit Hours:** (1)

### **CSED 6904 - Sty Tour: Hsng/Hm Frnsh**

**Credit Hours:** (1) Former: (HMEC 7904). **Description** On-the-scene knowledge about housing and home furnishings. May be repeated for a maximum of 6 credit hours. Only 6 hours applicable to degree. May be repeated for a maximum of 6 credit hours. Only 6 hours applicable to degree. **PREREQUISITE(S):** Permission of instructor.

### **CSED 6906 - Sty Tr: Fshn/Mrchnd**

**Credit Hours:** (1) Former: (HMEC 6900-006). **Description** On-the-scene knowledge about fashion merchandising. May be repeated for a maximum of 6 credit hours. Only 6 hours applicable to degree. May be repeated for a maximum of 6 credit hours. Only 6 hours applicable to degree. **PREREQUISITE(S):** Permission of instructor.

### **CSED 7300 - Independent Stdy In CSED**

**Credit Hours:** (1) Former: (HMEC 7300). **Description** Opportunity for creative, directed, independent study in a specific area of Consumer Science and Education to provide breadth and/or depth to the student's program of study. May be repeated for a maximum of 3 credit hours. May be repeated for a maximum of 3 credit hours. **PREREQUISITE(S):** Permission of instructor.

### **CSED 7312 - Intrn Child Care Srv**

**Credit Hours:** (3) Former: (HMEC 7311). **Description** Materials, methods, and coordination of work experiences for occupational Home Economics including supervised on-the-job experience in a selected occupational area (child care services) for the teacher. **PREREQUISITE(S):** CSED 2102, CSED 6101, CSED 7393, or their equivalents. Grades of S, U, or IP will be given

### **CSED 7313 - Intrn Food Service**

**Credit Hours:** (3) Former: (HMEC 7312). **Description** Materials, methods, and coordinating of work experiences for occupational Home Economics including supervised on-the-job experience in a selected occupational area (food service) for the teacher. **PREREQUISITE(S):** CSED 2202, 3302, 4202, 6502, CSED 7393, or their equivalents. Grades of S, U, or IP will be given.

### **CSED 7393 - Sem Family/Consumr Sci**

**Credit Hours:** (1) Former: (HMEC 7393). **Description** Analysis of the philosophy, curriculum, operation, and evaluation of vocational programs in family and consumer sciences with scope and direction based on Federal Vocational Legislation and State Department of Education: Rules and Regulations.

### **CSED 7400 - Internship In CSed**

**Credit Hours:** (3) Former: (HMEC 7302). **Description** Supervised field experience in a selected area of Consumer Science and Education. **PREREQUISITE(S):** Permission of Department Chair. Grades of S, U, or IP will be given.

### **CSED 7401 - Intrnshp In Chl/Fam St**

**Credit Hours:** (3) Former: (HMEC 7302). **Description** Supervised field experience. **PREREQUISITE(S):** Permission of Department Chair. Grades of S, U, or IP will be given.

### **CSED 7403 - Intrnshp Fam/Consumr Sci**

**Credit Hours:** (3) Former: (HMEC 7302). **Description** Supervised field experience. **PREREQUISITE(S):** Permission of Department Chair. Grades of S, U, or IP will be given.

### **CSED 7404 - Intrnshp Hous/Hom Fur**

**Credit Hours:** (3) Former: (HMEC 7302). **Description** Supervised field experience. **PREREQUISITE(S):** Permission of Department Chair. Grades of S, U, or IP will be given.

### **CSED 7405 - Intrnshp Fash Ind**

**Credit Hours:** (3) Former: (HMEC 7302). **Description** Supervised field experience. **PREREQUISITE(S):** Permission of Department Chair. Grades of S, U, or IP will be given.

### **CSED 7406 - Intrnshp Mktg Ed**

**Credit Hours:** (3) Former: (HMEC 7302). **Description** Supervised field experience. **PREREQUISITE(S):** Permission of Department Chair. Grades of S, U, or IP will be given.

### **CSED 7600 - Entrprnshp Merch/CSED**

**Credit Hours:** (3) **Description** Principles involved in initiating, managing, and accepting risks associated with entrepreneurial pursuits as applied to consumer science and education disciplines, e.g. private practice, consulting, technical assistance, and educational services; and operation of shops, day care centers, food service establishments, and boutiques.

### **CSED 7700 - Merch Thry/Prin/Pract**

**Credit Hours:** (3) **Description** Adaptation and implementation of current professional strategies with focus on the development of written, verbal, and visual skills.

### **CSED 7800 - Cnsmr Iss:Fam Syst Mgmt**

**Credit Hours:** (3) **Description** Utilizes a systems approach in the analysis of consumer issues from a managerial perspective with emphasis on major family situations across the life cycle.

## **Counseling Psychology**

### **COUN 7100 - Theories of Addiction**

**Credit Hours:** 3 **Description** Introduction to the theoretical, philosophical, and historical premises upon which addiction, treatment, and prevention are based. Biological, psychological, and sociological etiologies of substance use and related addictive disorders are studied. Students will be introduced to the epidemiology and developmental course of addiction, risk and protective influences that act on the course of addiction and its adverse health consequences. Both genetic and environmental underpinnings will be discussed. The impact of policy and economics will be studied.

### **COUN 7101 - Treatment Planning and Relapse Prevention in Addiction Counseling**

**Credit Hours:** 3



**Description** An introduction to the principles and practices upon which addiction treatment and relapse prevention are based. Students gain practical experience in assessment, diagnosis, treatment planning, and relapse prevention planning with addicted clients. **PREREQUISITE(S):** COUN 6783

### **COUN 7102 - Process and Behavioral Addictions**

**Credit Hours: 3 Description** This course provides an overview of the history, theory, and current research perspectives in the etiology, assessment, diagnosis and treatment of process and behavioral addictions. Specific attention will be paid to examining the similarities and differences between substance addictions and process and behavioral addictions. An introduction to the nature, epidemiology, theoretical, and developmental pathways of process and behavioral addictions including gambling addiction, sexual addiction, and pornography addiction will be provided. Etiologies of process and behavioral disorders are studied. **PREREQUISITE(S):** COUN 6783, COUN 7100.

### **COUN 7633 - Practicum in Addictions Counseling**

**Credit Hours: 3 Description** Supervised counseling experience in an Addictions Counseling/Treatment setting with varied clientele. The student will be involved in individual and group counseling activities appropriate to the setting. 150 hours. **PREREQUISITE(S):** COUN 6783, COUN 7100, COUN 7101, COUN 7411, COUN 7531, COUN 7541, COUN 7551, COUN 7571, COUN 7630, COUN 7710, COUN 7730, COUN 7750, and program approval.

### **COUN 7634 - Internship in Addictions Counseling**

**Credit Hours: 3 Description** Supervised counseling experience in an appropriate Addictions Counseling/Addictions Treatment setting. The student will be involved in agency services for a minimum of 300 hours (half-time, for 4 hours) or 600 hours (full-time, for 9 hours). May be repeated by half-time students for a maximum of 9 credit hours **PREREQUISITE(S):** COUN 6783, COUN 7100, COUN 7101, COUN 7411, COUN 7531, COUN 7541, COUN 7551, COUN 7571, COUN 7630, COUN 7710, COUN 7730, COUN 7750, COUN 7633 and program approval.

### **COUN 7711 - Forensic Mental Health Counseling**

**Credit Hours: 3 Description** The course offers a comprehensive understanding of how and why mentally ill clients intersect with the legal system, as victims and offenders. It provides a thorough explanation of how traumatic neurodevelopment, including adverse childhood experiences, result in sometimes maladaptive coping behaviors; assessment strategies and motivational interviewing techniques counselors use with mandated clients; specific assessments used with addictions, intimate partner violence, and sexual assault victims and offenders; diagnostic and ethical issues counselors commonly address in forensic settings; lifespan issues related to victimization and offending behavior; and self-care for counselors in forensic settings.

### **COUN 8711 - Forensic Mental Health Counseling**

**Credit Hours: 3 Cross listing** This will be cross listed with a master's level 7000 level course with the same name. **Description** The course offers a comprehensive understanding of how and why mentally ill clients intersect with the legal system, as victims and offenders. It provides a thorough explanation of how traumatic neurodevelopment, including adverse childhood experiences, result in sometimes maladaptive coping behaviors; assessment strategies and motivational interviewing techniques counselors use with mandated clients; specific assessments used with addictions, intimate partner violence, and sexual assault victims and offenders; diagnostic and ethical issues counselors commonly address in forensic settings; lifespan issues related to victimization and offending behavior; and self-care for counselors in forensic settings. This course is not repeatable. **PREREQUISITE(S):** None **COREQUISITE(S):** None **PREREQUISITE(S) or COREQUISITE(S):** None

### **CPSY 7570 - Hlth Psych/Diverse Populations**

**Credit Hours: (3) Description** This course will consist of discussions about readings, guest lectures, group presentations, and relevant experiential exercises. This course is designed to maximize student involvement in setting personal learning objectives, selecting learning activities, and tailoring the course materials to make it as meaningful as possible for each student. **PREREQUISITE(S):** COUN 7541 and enrollment in a COUN or CPSY degree program or consent of instructor

### **CPSY 7570-7574 - Special Topics in Counseling Psychology**

**Credit Hours:** (3) **Description** Current topics in counseling psychology. May be repeated with a change in content.  
**PREREQUISITE(S):** Enrollment in a COUN degree program or permission of instructor.

### **CPSY 7700 - Intrvntns Mntl Disordrs**

**Credit Hours:** (3) **Description** Covers assessment and diagnosis of mental disorders utilizing DSM-IV classification system and common counseling approaches for each of the major mental disorders; includes current understandings of the etiology, prevention, and treatment of each mental disorder; differential diagnosis using the DSM-IV manual; counseling approaches and case management; and psychopharmacology.  
**PREREQUISITE(S):** COUN 7630 and COUN 7571.

### **CPSY 7798 - Soc Just Coun & CPSY I**

**Credit Hours:** (3) **Description** Covers issues of social justice in counseling and counseling psychology and provides students with the opportunity to apply their knowledge to a local social justice issue through collaborative consultation, program evaluation, or clinical intervention.  
**PREREQUISITE(S):** COUN 7750/COUN 8750 Enrollment in a COUN or CPSY degree program or consent of instructor.

### **CPSY 7799 - Soc Just Coun & CPSY II**

**Credit Hours:** (3) **Description** Covers issues of social justice in counseling and counseling psychology in international settings. Provides students with the opportunity to apply their knowledge to an international social justice issue through collaborative consultation, program evaluation, or clinical intervention. Capstone of the course is a two-week immersion experience in another country. **PREREQUISITE(S):** COUN 7750/COUN 8750 Enrollment in a COUN or CPSY degree program or consent of instructor.

### **CPSY 8008 - Directed Readings CPSY**

**Credit Hours:** (1-3) **Description** Individually directed reading with written report required. May be repeated for maximum of 9 hours. May be repeated for maximum of 9 hours **PREREQUISITE(S):** Permission of the instructor.

### **CPSY 8101 - CPSY Foundations/Prfsnl Issues**

**Credit Hours:** (3) Former: (7684-8684) **Description** (7684-8684). Designed to orient students and initiate their identification with the profession of Counseling Psychology;

including history and future of Counseling Psychology; current issues in the field; and introduction to research, legal/ethical, and professional standards.  
**PREREQUISITE(S):** Enrollment in CPSY program.

### **CPSY 8102 - Seminar In Grp Cpsy**

**Credit Hours:** (3) Former: (8793) **Description** (8793). Theoretical-philosophical and research base of group counseling and psychotherapy; supervised application.  
**PREREQUISITE(S):** Doctoral Student

### **CPSY 8200 - Coun Psyc Practicum**

**Credit Hours:** (3-6) Former: (8694) **Description** (8694). Critical analysis of actual counseling interviews; various methods employed for recording and observing counseling sessions such as audio and video tapes and one-way vision screens. May be repeated for maximum of 12 semester hours. May be repeated for maximum of 12 semester hours  
**PREREQUISITE(S):** Enrollment in CPSY program.

### **CPSY 8201 - Advocacy, Consultation, & Ethics**

**Credit Hours:** (3) **Description** (3) Focus on professional identity, Counseling Psychology research, and legal/ethical issues; emphasizing professional issues, applications, and reading related to diversity and the urban environment.  
**PREREQUISITE(S):** Enrolled in CPSY program.

### **CPSY 8202 - Vocational Psychology**

**Credit Hours:** (3) Former: (COUN 8769) **Description** (COUN 8769). Analysis of career development theory and research as applied to practice of career counseling; variables affecting career development in diverse populations.  
**PREREQUISITE(S):** COUN 7561 or equivalent.

### **CPSY 8203 - Sem Coun/Coun Psy Res**

**Credit Hours:** (3) Former: (7683-8683) **Description** (7683-8683). Designed to give the advanced graduate student in counseling or counseling psychology and research the opportunity to explore current research and research methodology and to design a research project.  
**PREREQUISITE(S):** Completion of 6 credit hours of statistics, and enrollment in CPSY PhD program or Counseling EdD program

### **CPSY 8204 - Coun & Coun Psyc Rsrch I**

**Credit Hours:** (3) **Description** Intensive instruction in research design and implementation specific to Counselor Education and Counseling Psychology; addresses developing a research idea, literature review, design/methodology, data collection, writing, and supplementary topics, providing skills necessary to critique and conduct research.  
**PREREQUISITE(S)** or **COREQUISITE(S):** COUN 7551.

### **CPSY 8300 - Advanced Practicum in Counseling Psychology**

**Credit Hours:** 3 **Description** Doctoral students will explore targeted clinical issues and populations in depth; combines didactic, experiential, and process components. May be repeated for a maximum of 12 credit hours.  
**PREREQUISITE(S):** 9 hours of CPSY 8200

### **CPSY 8501 - Coun Psyc Research**

**Credit Hours:** (1-3) Former: (7790-8790) **Description** (7790-8790). Supervised practice in developing, designing, conducting, writing, and reporting on a variety of investigative formats in counseling research. May be repeated for a maximum of 12 semester hours. May be repeated for a maximum of 12 semester hours **PREREQUISITE(S):** Enrolled in CPSY program or consent of the instructor.

### **CPSY 8570 - Hlth Psych/Diverse Populations**

**Credit Hours:** (3) **Description** This course will consist of discussions about readings, guest lectures, group presentations, and relevant experiential exercises. This course is designed to maximize student involvement in setting personal learning objectives, selecting learning activities, and tailoring the course materials to make it as meaningful as possible for each student. **PREREQUISITE(S):** COUN 7541 and enrollment in a COUN or CPSY degree program or consent of instructor.

### **CPSY 8570-8574 - Special Topics in Counseling Psychology**

**Credit Hours:** (3) **Description** Current topics in counseling psychology. May be repeated with a change in content.  
**PREREQUISITE(S):** Enrollment in a COUN degree program or permission of instructor.

### **CPSY 8575 - Adult Pers Assessmnt**

**Credit Hours:** (3) **Description** Administration, scoring, and interpretation of psychodiagnostic instruments for individual personality assessment in adults. **PREREQUISITE(S):** COUN 8700 and enrollment in a COUN or CPSY degree program or consent of instructor.

### **CPSY 8576 - Adult Cog Assessment**

**Credit Hours:** (3) **Description** Explores concepts of intelligence and cognition in adults, analyzes issues and controversies related to assessment of cognitive functioning, and develops competency in administration, scoring, and interpretation of assessment instruments.  
**PREREQUISITE(S):** Enrollment in a COUN or CPSY degree program or consent of instructor.

### **CPSY 8577 - Supervisn in Coun Psyc**

**Credit Hours:** (3) **Description** Implementation and critical analysis of theories of counseling psychology supervision, strategies associated with these theories, and assessment of supervision models; surveys research on issues related to supervision in counseling psychology. **PREREQUISITE(S):** CPSY 8200 and enrollment in a COUN or CPSY degree program or consent of instructor.

### **CPSY 8578 - Constructivist Psychotherapy**

**Credit Hours:** (3) **Description** Intensive experiential and coherence based psychotherapy course. Focus is on participation, demonstration, and clinical self awareness.  
**PREREQUISITE(S):** Enrollment in a COUN or CPSY degree program or consent of instructor.

### **CPSY 8600 - Coun Psyc Seminar**

**Credit Hours:** (1-3) **Description** Devoted to current concerns and methodology in Counseling Psychology. May be repeated for a maximum of 9 semester hours. May be repeated for a maximum of 9 semester hours **PREREQUISITE(S):** Enrollment in a COUN or CPSY degree program or consent of instructor. Grades of S, U, or IP will be given.

### **CPSY 8700 - Intrvntns Mntl Disordrs**

**Credit Hours:** (3) **Description** Covers assessment and diagnosis of mental disorders utilizing DSM-IV classification system and common counseling approaches for each of the major mental disorders; includes current understandings of the etiology, prevention, and treatment of each mental disorder; differential diagnosis using the DSM-IV manual; counseling

approaches and case management; and psychopharmacology.

**PREREQUISITE(S):** Enrollment in a COUN or CPSY degree program or consent of instructor.

### **CPSY 8784 - Adv Coun Psych Theories**

**Credit Hours:** 3 **Description** This course will have a seminar/discussion group format. Discussions will be based on material from the texts, outside reading assignments, and relevant issues that arise in lectures. The discussion portions of the course place primary responsibility on each student to be interactive with the instructor and peers, to critically read and reflect upon assigned reading material, to raise questions and constructively discuss issues relevant to the readings, and to discern differences between one's knowledge and one's beliefs. **PREREQUISITE(S):** Doctoral level major in Counseling Psychology or Counselor Education and Permission of Instructor; a Masters level course in Theories Standard Letter

### **CPSY 8790 - Spc Prblms in Coun Psychology**

**Credit Hours:** (1-3) **Description** Individual investigation and report in the area of counseling psychology under the direction of a faculty member. May be repeated for a maximum of 9 hours. May be repeated for a maximum of 9 hours

**PREREQUISITE(S):** Enrollment in a COUN or CPSY degree program.

### **CPSY 8798 - Soc Just Coun**

**Credit Hours:** (3) **Description** Covers issues of social justice in counseling and counseling psychology and provides students with the opportunity to apply their knowledge to a local social justice issue through collaborative consultation, program evaluation, or clinical intervention.

**PREREQUISITE(S):** COUN 7750/COUN 8750. Enrollment in a COUN or CPSY degree program or consent of instructor.

### **CPSY 8799 - Soc Just Coun & CPSY II**

**Credit Hours:** (3) **Description** Covers issues of social justice in counseling and counseling psychology in international settings. Provides students with the opportunity to apply their knowledge to an international social justice issue through collaborative consultation, program evaluation, or clinical intervention. Capstone of the course is a two-week immersion experience in another country. **PREREQUISITE(S):** COUN 7750/COUN 8750 and enrollment in a COUN or CPSY degree program or permission of instructor.

### **CPSY 8800 - Predoctoral Intrnshp**

**Credit Hours:** (1-6) Former: (8890) **Description** (8890). Supervised internship in setting accredited by American Psychological Association or listed in APPIC directory. May be repeated for maximum of 9 semester hours. May be repeated for maximum of 9 semester hours

**PREREQUISITE(S):** Completion of all coursework, comprehensive examinations, and successful proposal of dissertation.

### **CPSY 8999 - Prof Devel Coun Psyc**

**Credit Hours:** (0) **Description** (1-3) Individual investigation and report in the area of counseling psychology under the direction of a faculty member. May be repeated for a maximum of 9 hours. May be repeated for a maximum of 9 hours. **PREREQUISITE(S):** Enrollment in a COUN or CPSY degree program.

### **CPSY 9000 - Dissertation**

**Credit Hours:** (1-12) **Description** Credit may be earned over a period of several semesters. The dissertation may be an organized scientific contribution or a comprehensive analysis of theory and practice in a specific area.

## **Counseling Services**

### **COUN 6611 - Intro To Counseling**

**Credit Hours:** (3) **Description** Exploration of history, principles and administration of counseling services in community agencies, schools, business, and industry. Survey of applicable counseling services, skills, and techniques.

### **COUN 6781 - Strat Crisis Intrvntn**

**Credit Hours:** (3) **Description** Process of crisis intervention; study and practice in understanding crisis-induced dysfunctional behavior, recognizing crisis situations, and crisis counseling procedures.

### **COUN 6783 - Alcohol/Drug Abuse Ser**

**Credit Hours:** (3) **Description** Survey of human services for treating alcoholics and substance abusers; overview of treatment strategies and philosophies.

### **COUN 6901 - Prin/Tech/Rehab Counsel**

**Credit Hours:** (3) **Description** Overview of the broad field of rehabilitation, including the philosophical, social, psychological, and legal basis of rehabilitation, professional practice, and the counselor's role and function in the rehabilitation process.

### **COUN 6913 - Med/Psyc Aspects/Rehab**

**Credit Hours:** (3) **Description** Orientation to medical profession and its relationship to rehabilitation counseling; basic medical terminology, bodily systems, and DSM diagnosis; theories, application, and research in psychological adjustment of individuals with disabilities; understanding impact of external/environmental conditions on lives of individuals with disabilities.

### **COUN 6921 - Vocational Dev/Occ Info**

**Credit Hours:** (3) **Description** Collection, evaluation, and use of occupational, educational, and related information in rehabilitation; familiarity with development of job descriptions and vocational surveys; study of labor market trends and theories of occupational choice.

### **COUN 7000 - Students w Dis in Post Sec Edu**

**Credit Hours:** (3) **Description** The purpose of this course is to provide an overview of the history and current status of students with disabilities in postsecondary settings. The course will provide an overview of the populations of students with disabilities in higher education today, the role disability and accessibility play in student success, and the marginality of such students on college campuses. Disability status as a diversity issue and the intersectionality of disability with other factors impacting college readiness, enrollment, and success will be addressed.

### **COUN 7001 - Disability Support Services**

**Credit Hours:** (3) **Description** Disability Support Services are the offices on college campuses that are designated to assist students with disabilities in gaining equal and meaningful access to all aspects of the postsecondary environment. This course reviews the development of such offices, the services they provide, and the challenges they face in serving students with disabilities. This course will cover such topics as architectural barriers, classroom accommodations, the legal context of disability services, and roles of professionals in these offices vis-à-vis other services provided on college campuses.

### **COUN 7002 - Univ Des, Ast Tech, & Accomm**

**Credit Hours:** (3) **Description** This course will cover essential issues, techniques, and opportunities in providing equal access to higher education to students with disabilities. Students will be introduced to the concepts and activities associated with universal design, the process of designing products, buildings, environments, and products so they can be used readily by the widest possible range of users. Current trends in assistive technology for classroom and campus use will be covered.

### **COUN 7003 - Legal Issues in Dis Spt Svcs**

**Credit Hours:** (3) **Description** An array of legislation exists to promote the inclusion of students with disabilities in higher education settings. This course will cover Federal and other relevant laws governing the work of disability support services (DSS) and court cases that impact the work of DSS professionals. Key legislation such as the Americans with Disabilities Act, the Rehabilitation Act, and the Architectural Barriers Act will be covered.

### **COUN 7006-7015 - Special Topics in Counseling and Personnel Services**

**Credit Hours:** (1-3) **Description** Study of current topics in the area of counseling and personnel services. May be repeated with a change in content.

### **COUN 7411 - Foundatns of Counseling**

**Credit Hours:** (3) **Description** Introduction to professional roles, responsibilities, and identity of counselor; counseling ethics, credentials, and sociocultural context of counseling.

### **COUN 7513 - Secondary School Transition**

**Credit Hours:** (3) *Cross listing* SPED 7513. **Description** Emphasizes transition issues, life skills, and vocational education to prepare students with exceptionalities for life after secondary school; also focuses on legal issues, family concerns, and effective transition programming. Familiarity with available community resources and the importance of interagency collaboration stressed.

### **COUN 7531 - Group Counseling Proccs**

**Credit Hours:** (3) **Description** Organization and maintenance of effective groups; group participation, projects and readings to aid students in delineating their roles in various group settings. **PREREQUISITE OR COREQUISITE:** COUN 7411.

### **COUN 7541 - Theories Counsel & Pers**

**Credit Hours:** (3) Former: (7581-8581) **Description** (7581-8581). Person-centered, behavioral, cognitive-behavioral, reality, rational-emotive, Gestalt, psychoanalytic, and other appropriate theories; emphasis on theoretical concepts, principles, and dynamics as applied in practice. **PRE- or COREQUISITE:** COUN 7411.

### **COUN 7542 - Child Counseling, Consultation and Intervention in Schools**

**Credit Hours:** (3) Former: (7582-8582) **Description** This online course provides an introduction to counseling children and adolescents as a means of facilitating healthy development and promoting academic achievement. Through didactic and experiential learning, students in school-based helping professions will develop skills to utilize child centered communication, creative therapies, consultation, and identify and implement theoretically and developmentally informed interventions.

### **COUN 7551 - Assessment Techniques**

**Credit Hours:** (3) Former: (7651-8651) **Description** The basic principles, test and non-test appraisal instruments, and skills of diagnosis; selection, use, and interpretation of such instruments appropriate for individual appraisal.

### **COUN 7561 - Career Counseling**

**Credit Hours:** (3) Former: (7661-8661) **Description** (7661-8661). Process of career development and planning, career and lifestyle counseling, planning, and development. **PREREQUISITE OR COREQUISITE:** COUN 7411. **PREREQUISITE(S):** Permission of the Graduate Coordinator.

### **COUN 7571 - Clinical Techniques**

**Credit Hours:** (3) Former: (7690-8690) **Description** (7690-8690). Implementation and practice of counseling theories; modeling, practice, and critique of counseling skills.

### **COUN 7630 - Clinical Mental Health Coun**

**Credit Hours:** (3) **Description** Overview of skills and knowledge unique to mental health counselors; topics include but not limited to: mental health service delivery, assessment for mental disorders, psychotropic medications, the history of mental health counseling, advocacy, social justice, and preventive mental health concepts. **PREREQUISITE(S):** CJUS 7128.

### **COUN 7631 - Pract Mental Health Coun**

**Credit Hours:** (3) Former: (7892-8892) **Description** (7892-8892). Supervised counseling experience in a community/mental health setting with varied clientele. The student will be involved in individual and group counseling activities appropriate to the setting. 150 hours. **PREREQUISITE(S):** COUN 7411, COUN 7531, COUN 7541, COUN 7551, COUN 7571, COUN 7630, COUN 7710, COUN 7730, COUN 7750, AND COUN 7885; CPSY 7700; EDPR 7117; and program approval. Grades of S, U, or IP will be given.

### **COUN 7632 - Intern Cmty/Mntl Hlth**

**Credit Hours:** (4-9) Former: (7698-8698) **Description** (7698-8698). Supervised counseling experience in an appropriate community/mental health setting. The student will be involved in agency services for a minimum of 300 hours (half-time, for 4 hours) or 600 hours (full-time, for 9 hours). May be repeated by half-time students for a maximum of 9 semester hours. May be repeated by half-time students for a maximum of 9 semester hours **PREREQUISITE(S):** Permission of Coordinator of Graduate Studies

### **COUN 7640 - Principles Schl Couns**

**Credit Hours:** (3) **Description** Organization and administration of components of counseling services in schools, role and function of the school counselor in K-12 system.

### **COUN 7641 - Prac Elem Sch Coun**

**Credit Hours:** (3) Former: (7692-8692) **Description** (7692-8692). Supervised counseling with pre K-6 elementary age children; group discussions and individual interviews provide the student opportunities to interact with elementary children in a variety of multicultural settings; practice in appropriate techniques in interaction with elementary children. 150 hours.

### **COUN 7642 - Intern Elem Sch Coun**

**Credit Hours:** (3-6) Former: (7697) **Description** (7697). Supervised counseling experience in working with pre K-6 elementary school-aged children in multicultural settings. The student will be involved in services for a minimum of 300 (or half-time for 4 hours) or 600 (or full-time for 6 hours). May be repeated by half-time students for a maximum of 6 semester hours. May be repeated by half-time students for a maximum of 6 semester hours

### **COUN 7643 - Prac Middle School Coun**

**Credit Hours:** (3) **Description** Supervised counseling with adolescents in middle multicultural settings; assistance with individuals and groups and practice in providing assistance in educational, occupational, and personal decision making. 150 hours.

### **COUN 7644 - Intern Middle School Coun**

**Credit Hours:** (3-6) **Description** Supervised counseling experience in working with adolescents in middle multicultural settings. The student will be involved in services for a minimum of 300 (or half-time for 4 hours) or 600 (or full-time for 6 hours). May be repeated by half-time students for a maximum of 6 semester hours. May be repeated by half-time students for a maximum of 6 semester hours

### **COUN 7645 - Prac Sec School Coun**

**Credit Hours:** (3) Former: (7691-8691) **Description** (7691-8691). Supervised counseling with adolescents in middle and/or high school multicultural settings; assistance with individuals and groups and practice in providing assistance in educational, occupational, and personal decision making. 150 hours.

### **COUN 7646 - Intern Sec Sch Coun**

**Credit Hours:** (3-6) Former: (7696-8696) **Description** (7696-8696). Supervised counseling experience in working with adolescents middle and/or high school multicultural settings. The student will be involved in services for a minimum of 300 (or half-time for 4 hours) or 600 (or full-time for 6 hours). May be repeated by half-time students for a maximum of 6 semester hours. May be repeated by half-time students for a maximum of 6 semester hours

### **COUN 7650 - School Counseling Practicum**

**Credit Hours:** 3 **Description** Supervised counseling field experience with PK-12+ students. 150 hours. Program

approval required. Grades of S, U, or I will be given. Students without prior teaching experience (1 year minimum) will need to complete 25 additional hours observing the educational setting. **PREREQUISITE(S):** Program approval and department permit.

### **COUN 7660 - School Counseling Internship**

**Credit Hours:** 4-6 **Description** Supervised advanced counseling field experience with PK-12+ students. Full internship is 600 hours (6-credit hours) and part-time internship is 300 credit hours (4-credit hours taken two semesters). Program approval required. Grades of S, U, or I will be given. 4 **PREREQUISITE(S):** Department permit and program approval.

### **COUN 7700 - Spiritual Issues in Counseling**

**Credit Hours:** (3) **Description** Various spiritual worldviews and issues as well as counseling interventions and ethical concerns will be discussed in the context of recently developed multicultural and spiritual counseling competencies. This course focuses on the importance of spiritual and/or religious values and beliefs that impact the mental health and emotional well being of persons living in diverse communities.

### **COUN 7710 - Addiction Counseling**

**Credit Hours:** 3 **Description** This course provides advanced discussion and practice of techniques of assessment, diagnosis, and practice of Addictions Counseling. **PREREQUISITE(S):** COUN 7101, COUN 7571 and enrollment in a COUN or CPSY degree program or consent of instructor.

### **COUN 7720 - Sys Develp Family Thrpy**

**Credit Hours:** (3) Former: (7780) **Description** (7780). Systems theory applied to families as a framework for family therapy; analysis of family systems at different stages of the family life cycle; history of family therapy, research, and professional ethical issues.

### **COUN 7721 - Thry/Tchnqs Fam Thrpy**

**Credit Hours:** (3) Former: (8781) **Description** (8781). Major approaches to family therapy: structural, Bowenian, strategic, behavioral, communications, experiential, object relations; techniques and assumptions, traditional and current practices.

### **COUN 7722 - Couple Coun/Therapy**

**Credit Hours:** (3) Former: (8782) **Description** (8782). Marital and couple counseling and problem situations; phases of therapy, ethical dilemmas, research methodology in couple/family dysfunction.

### **COUN 7723 - Hum Sexulty Coun/Psyc**

**Credit Hours:** (3) **Description** Attitudes, values, beliefs, and theoretical concerns related to human sexuality; counseling strategies for individuals and couples regarding sex-related issues. **PREREQUISITE(S):** Permission of Coordinator of Graduate Studies.

### **COUN 7724 - Advanced Marriage, Couple and Family Counseling**

**Credit Hours:** 3 **Description** This course is an advanced and experiential exploration of selected major treatment approaches utilized in Marriage, Couple, and Family Counseling. An increased exploration of systemic and brief family counseling and the development of practical skills and techniques constitutes the primary focus of the course. Students will be required to understand and demonstrate counseling skills as they relate to the systems and brief therapy frameworks and techniques discussed in class with regard to current Marriage, Couple and Family standards. **PREREQUISITE(S):** Only students who are enrolled in the Marriage, Couple and Family Counseling concentration may enroll in this course. Instructor permission is required. Prerequisites include: COUN 7720, COUN 7721, and COUN 7722. Standard Letter

### **COUN 7725 - Sex Therapy**

**Credit Hours:** 3 **Description** Participants in this course learn advanced theories and techniques for providing sex therapy. This course provides a lifespan developmental approach is applied to the study of human sexuality and gives an overview of sex therapy as applicable to Marriage, Couple and Family Therapy. Medical and psychosocial aspects of sexual function are addressed. Course topics include physical, psychological, and social development; sex therapy theories and techniques; current sexual life-styles; sexual dysfunction; relationship issues; and sexually transmitted diseases. **PREREQUISITE(S):** Enrollment limited to students currently enrolled in the Marriage, Couple and Family Counseling concentration. Students must also have successfully completed the following prerequisite courses prior to enrolling in this course: COUN 7720, COUN 7721, and COUN 7722. Standard Letter

### **COUN 7730 - Crisis Intrvntn Coun**

**Credit Hours:** (3) **Description** Study and practice in understanding crisis theory and crisis-induced dysfunctional behavior, recognizing crisis situations, and the application of crisis intervention methods and strategies to help people in emotional crises return to a state of cognitive, affective, and behavioral equilibrium and functional coping.

**PREREQUISITE(S):** Student must have completed required course work or be in the last semester of required course work

### **COUN 7740 - Coun Victmzd Chld/Fam**

**Credit Hours:** (3) **Description** This course is designed to familiarize students with issues related to counseling sexually victimized children and their families. **PREREQUISITE(S):** Permission of Coordinator of Graduate Studies

### **COUN 7750 - Multicultural Counseling**

**Credit Hours:** (3) Former: (8784) **Description** (8784). Theory and research on individual and group multicultural counseling with particular attention to ethnic and racial sectors of society in the US. Grades of S, U, or IP will be given.

### **COUN 7751 - Gender Issues In Coun**

**Credit Hours:** (3) Former: (8783) **Description** (8783). Current issues related to counseling women and men including developmental theory, awareness of sex role socialization and biases, and appropriate approaches to counseling women and men. Grades of S/U or IP will be given.

### **COUN 7752 - Coun Gay/Lesbian/Bisexl**

**Credit Hours:** (3) **Description** Gay, lesbian, and bisexual issues in counseling and psychotherapy; affirmative psychotherapy techniques and gay, lesbian, bisexual, and transgender issues, including identity formation, homophobia and heterosexism, relationships, parent and family dynamics, ethnic minorities, religion and morality, gender roles, AIDS/HIV, and suicidal ideation. Grades of S, U, or IP will be given.

### **COUN 7770 - Consult Theories/Pract**

**Credit Hours:** (3) Grades of S, U, or I will be given.

### **COUN 7771 - Clinical Hypnotherapy**

**Credit Hours:** (3) **Description** Explores theoretical views and pragmatic application of clinical hypnosis for therapeutic purposes; students will master basic therapeutic skills and



ethical standards of clinical hypnosis while exploring pragmatic applications and limitations of various hypnotherapy techniques in counseling.

### **COUN 7780 - Seminar In Counseling**

**Credit Hours:** (1-3) Former: (7672-8672) **Description** (7672-8672). Devoted to current concerns and methodology in counseling. May be repeated for a maximum of 9 hours credit. May be repeated for a maximum of 9 hours credit

### **COUN 7790 - Spc Prblms In Coun**

**Credit Hours:** (1-3) Former: (7993) **Description** (7993). Individual investigation and report in the area of counseling under the direction of a faculty member. May be repeated for a maximum of 9 hours. May be repeated for a maximum of 9 hours

### **COUN 7820-7823 - Special Topics in Counseling**

**Credit Hours:** (1-3) **Description** Study of current topics in the area of counseling. May be repeated with a change in content;

### **COUN 7824 - College Admission Counseling \*\***

**Credit Hours:** (3) **Description** This online course is designed to provide systematic training in counseling for the college admission and selection process. Students will be introduced to concepts and practical skills required for competency in working with diverse college applicant populations (e.g., the first generation college student, the learning disabled, the student athlete). The course will consist of remote lectures, presentations, learning activities, video viewings, class discussions boards, and a mini field-work placement designed to enhance knowledge of the college admission and selection process. Topics will include addressing inequities in college access and college-going, organizing a college counseling office, and developing a college-going high school culture.

### **COUN 7825 - Strategies Career Coun in K-12 \*\***

**Credit Hours:** (3) **Description** This online course emphasizes a practical application of career theory to school settings to assist all students plan for life beyond high schools. The adoption of career and college readiness standards by an increasing number of states has created a need for school

counselors to lead efforts to design and implement comprehensive K-12 career planning programs. This course aims to build specialization as participants develop the skills to design and implement cohesive career guidance programs informed by developmental theory, assessment, and the career decision-making process. A core requirement of this course is for students to work with a high school age student to complete an 8-session career counseling portfolio. Students enrolled in the School counseling program can substitute this course for COUN 7561 Career Counseling (3).

### **COUN 7826 - Schl Coun to Close Achvmnt Gap \*\***

**Credit Hours:** (3) **Description** The education system is considered the premier vehicle for social mobility, yet student achievement data, graduation and matriculation rates continue to reflect broad societal inequalities. The purpose of this course is to train school counselors to assist marginalized students overcome the societal, familial, and educational barriers that impede positive educational and career outcomes. This course focuses on developing school counselor's leadership and advocacy skills to design strategic guidance programs grounded in evidence based practices that target the achievement gap and facilitate educational equity for all students.

### **COUN 7827 - Capstone College & Career Coun**

**Credit Hours:** (3) **Description** The purpose of this capstone course is to provide students the opportunity to synthesize their knowledge of college and career counseling and develop their expertise in a field based setting of their choice. Students will spend between 45 to 100 hours in the field depending on the nature of their assignment (research or practice). Students are required to secure a field setting and approval from the program coordinator in advance of commencing this class. Students can choose from a broad array of field placements and activities reflecting their interests and intended specialization. Dual enrolled MS school counseling and certificate students do not have to take this class if they take COUN 7646 - Intern Sec Sch Coun (3-6) with a dedicated emphasis in college and career counseling.

### **COUN 7841 - Adv Coun Thry & Tech**

**Credit Hours:** (3) Former: (CPSY 7784-8784) **Description** (CPSY 7784-8784). Critical analysis of selected theories and techniques of counseling; emphasis on a variety of major theories and systems; provides a thorough theoretical base for developing a consistent approach to professional counseling.

### **COUN 7880 - Legal and Ethical Issues in Counseling PK-12 Students**

**Credit Hours:** 3 **Description** This course provides schools counselors and other school professionals with an opportunity to examine legal and ethical issues in working with PreK-12+ students. Through exploring and creating case studies, reviewing relevant research, and understanding of court case rulings, school-based helping professionals will develop skills to work through the legal and ethical decision-making model. **PREREQUISITE(S):** Department permit and advisor approval.

### **COUN 7885 - Legal/Eth Issues Coun**

**Credit Hours:** (3) Former: (CPSY 7785-8785) **Description** (CPSY 7785-8785). Examination of existing and needed legislation affecting counseling and psychology, review of critical court cases; ethical standards of professional counseling and psychological organizations; survey of responsibilities and liabilities.

### **COUN 7905 - Case Mgmt In Counseling**

**Credit Hours:** (3) **Description** Introduction to case management and procedures used in counseling and other human service settings; development of a conceptual understanding of case management, and ability to apply this knowledge to different types of populations and different types of treatment settings.

### **COUN 7912 - Intro Psych Rehab Coun**

**Credit Hours:** (3) **Description** Psychiatric rehabilitation concepts and principles, techniques, history, treatment settings and modalities; emphasizing issues central to mental health consumers such as empowerment, the consumer movement, family intervention, cross-cultural issues, recovery and reintegration within the community.

### **COUN 7941 - Prac In Rehab Counsel**

**Credit Hours:** (3) **Description** Supervised counseling experiences with persons with disabilities; application of appropriate theories, principles, and practices to personal counseling.

### **COUN 7942 - Internshp Rehab Counsel**

**Credit Hours:** (4-9) **Description** Supervised field experiences in cooperation with the state rehabilitation agency and other human service agencies and facilities.

### **COUN 7950 - Practicum in Marriage, Couple and Family Counseling**

**Credit Hours:** 3 **Description** This course provides supervised counseling experience in a Marriage, Couple and Family Counseling setting. Students will be involved in individual and/or group Marriage, Couple and Family Counseling activities appropriate to the setting. All students must complete 60 direct clinical hours and 90 indirect professional hours (for a minimum total of 150 hours).

**PREREQUISITE(S):** Registration limited to students in the Marriage, Couple, and Family Counseling concentration; program permission required to register. The class also has the following prerequisites: COUN 7411, COUN 7531, COUN 7541, COUN 7551, COUN 7571, COUN 7720, COUN 7721, and COUN 7722. S/U/IP

### **COUN 7951 - Internship in Marriage, Couple and Family Counseling**

**Credit Hours:** 3 **Description** Supervised counseling experience in a Marriage, Couple and Family Counseling setting with varied clientele. Each student will be involved in couple, family, and individual counseling activities appropriate to the setting. The student will be involved in internship services at an approved site for a minimum of 300 hours (half-time, for 4 hours) or 600 hours (full-time, for 9 hours). Students must complete 9 credit hours in total to complete program requirements. **PREREQUISITE(S):** Only students enrolled in the Marriage, Couple and Family Counseling concentration may enroll in the class. Program permission is required. Additionally, the following prerequisites must be completed prior to enrollment in this class: COUN 7411, COUN 7531, COUN 7541, COUN 7551, COUN 7571, COUN 7720, COUN 7721, COUN 7722, and COUN 7950. S/U/IP

### **COUN 8000 - Spec Culmn Experience**

**Credit Hours:** (1-6) **Description** Thesis, internship, field study, or special project designed under the direction of student's committee; serves as capstone experience in the Education Specialist Program. Grades of S, U, or IP will be given.

### **COUN 8501 - Doctoral Seminar Counseling**

**Credit Hours:** 3 **Description** Professional seminar designed for beginning doctoral students in counseling focusing on the development of professional identity as a leader in counseling; critical philosophical issues; research; new directions in theory and techniques; issues in counselor education and practice.

### **COUN 8502 - Counseling Residency Research Seminar**

**Credit Hours:** (3) **Description** Supervised construction of the residency research project. Either under individual supervision or in concert with a research team completion of a research project suitable for publication in a national referred journal or presentation at a refereed professional conference.

### **COUN 8510 - Counselor Supervision**

**Credit Hours:** (3) Former: (CPSY 7786-8786) **Description** (CPSY 7786-8786). Critical analysis of theories of counselor supervision, techniques associated with theories, and assessment of those supervision models; survey of research on counseling supervision issues.

### **COUN 8511 - Practicum in Counseling**

**Credit Hours:** (3) **Description** Supervised experience in appropriate settings; the student will be involved in varied supervision activities as needed. 150 hours. Grades of A-F, or IP will be given.

### **COUN 8512 - Teaching Counselor Education**

**Credit Hours:** (3) **Description** Pedagogical tools and issues associated with learning in pre-service counselor preparation programs. Skill development in curriculum and course design, teaching methods, and strategies.

**PREREQUISITE(S):** COUN 8501

### **COUN 8530 - Doctoral Intern Counseling**

**Credit Hours:** (3-12) Former: (7699/8699) **Description** (7699/8699). Supervised experience in counseling and personnel services; complements course study with on-site professional experience focused on programmatic, career, and individual student goals.

### **COUN 8571 - Clinical Techniques**

**Credit Hours:** (3) Former: (7690-8690) **Description** (7690-8690). Implementation and practice of counseling theories; modeling, practice, and critique of counseling skills.

### **COUN 8630 - Clinical Mental Health Coun**

**Credit Hours:** (3) **Description** Overview of skills and knowledge unique to mental health counselors; topics include but not limited to: mental health service delivery, assessment for mental disorders, psychotropic medications, the history of mental health counseling, advocacy, social justice, and preventive mental health concepts.

### **COUN 8640 - Principles Schl Couns**

**Credit Hours:** (3) **Description** Organization and administration of components of counseling services in schools, role and function of the school counselor in K-12 system.

### **COUN 8700 - Spiritual Issues in Counseling**

**Credit Hours:** (3) **Description** Various spiritual worldviews and issues as well as counseling interventions and ethical concerns will be discussed in the context of recently developed multicultural and spiritual counseling competencies. This course focuses on the importance of spiritual and/or religious values and beliefs that impact the mental health and emotional well being of persons living in diverse communities.

### **COUN 8710 - Alcohol/Drug Coun**

**Credit Hours:** (3) **Description** Process of counseling alcoholic and drug dependent persons; modalities of treatment, philosophy of treatment and referral. Grades of S, U, or IP will be given.

### **COUN 8720 - Sys Develop Family Thrpy**

**Credit Hours:** (3) Former: (7780) **Description** (7780). Systems theory applied to families as a framework for family therapy; analysis of family systems at different stages of the family life cycle; history of family therapy, research, and professional ethical issues.

### **COUN 8721 - Thry/Tchnqs Fam Thrpy**

**Credit Hours:** (3) Former: (8781) **Description** (8781). Major approaches to family therapy: structural, Bowenian, strategic,

behavioral, communications, experiential, object relations; techniques and assumptions, traditional and current practices.

### **COUN 8722 - Couple Coun/Therapy**

**Credit Hours:** (3) Former: (8782) **Description** (8782). Marital and couple counseling and problem situations; phases of therapy, ethical dilemmas, research methodology in couple/family dysfunction.

### **COUN 8723 - Hum Sexulity Coun/Psyc**

**Credit Hours:** (3) **Description** Attitudes, values, beliefs, and theoretical concerns related to human sexuality; counseling strategies for individuals and couples regarding sex-related issues.

### **COUN 8730 - Crisis Intrvntn Coun**

**Credit Hours:** (3) **Description** Study and practice in understanding crisis theory and crisis-induced dysfunctional behavior, recognizing crisis situations, and the application of crisis intervention methods and strategies to help people in emotional crises return to a state of cognitive, affective, and behavioral equilibrium and functional coping.

### **COUN 8740 - Coun Victmzd Chld/Fam**

**Credit Hours:** (3) **Description** This course is designed to familiarize students with issues related to counseling sexually victimized children and their families.

### **COUN 8750 - Multicultural Counseling**

**Credit Hours:** (3) Former: (8784) **Description** (8784). Theory and research on individual and group multicultural counseling with particular attention to ethnic and racial sectors of society in the US. **PREREQUISITE(S):** Permission of Instructor.

### **COUN 8751 - Gender Issues In Coun**

**Credit Hours:** (3) Former: (8783) **Description** (8783). Current issues related to counseling women and men including developmental theory, awareness of sex role socialization and biases, and appropriate approaches to counseling women and men.

### **COUN 8752 - Coun Gay/Lesbian/Bisexl**

**Credit Hours:** (3) **Description** Gay, lesbian, and bisexual issues in counseling and psychotherapy; affirmative psychotherapy techniques and gay, lesbian, bisexual, and transgender issues, including identity formation, homophobia and heterosexism, relationships, parent and family dynamics, ethnic minorities, religion and morality, gender roles, AIDS/HIV, and suicidal ideation.

### **COUN 8770 - Consult Theories/Pract**

**Credit Hours:** (3)

### **COUN 8771 - Clinical Hypnotherapy**

**Credit Hours:** (3) **Description** Explores theoretical views and pragmatic application of clinical hypnosis for therapeutic purposes; students will master basic therapeutic skills and ethical standards of clinical hypnosis while exploring pragmatic applications and limitations of various hypnotherapy techniques in counseling.

**PREREQUISITE(S):** ESCI 1020 or ESCI 1040.

### **COUN 8780 - Seminar In Counseling**

**Credit Hours:** (1-3) Former: (7672-8672) **Description** (7672-8672). Devoted to current concerns and methodology in counseling. May be repeated for a maximum of 9 hours credit. May be repeated for a maximum of 9 hours credit **PREREQUISITE(S):** ESCI 1040 and MATH 1830 or equivalent.

### **COUN 8790 - Spc Prblms In Coun**

**Credit Hours:** (1-3) Former: (7993) **Description** (7993). Individual investigation and report in the area of counseling under the direction of a faculty member. May be repeated for a maximum of 9 hours. May be repeated for a maximum of 9 hours **PREREQUISITE(S):** ESCI (GEOL) 4211 or ESCI 6211 or permission of instructor.

### **COUN 8820-8823 - Special Topics in Counseling**

**Credit Hours:** (1-3) **Description** Study of current topics in the area of counseling. May be repeated with a change in content; see on-line class listings for topics

### **COUN 8824 - College Admission Counseling**

**Credit Hours:** (3) **Description** This online course is designed to provide systematic training in counseling for the college admission and selection process. Students will be introduced to concepts and practical skills required for competency in working with diverse college applicant populations (e.g., the first generation college student, the learning disabled, the student athlete). The course will consist of remote lectures, presentations, learning activities, video viewings, class discussions boards, and a mini field-work placement designed to enhance knowledge of the college admission and selection process. Topics will include addressing inequities in college access and college-going, organizing a college counseling office, and developing a college-going high school culture. **PREREQUISITE(S):** ESCI 1010, MATH 1710, and PHYS 2010, or permission of instructor.

### **COUN 8825 - Strategies Career Coun in K-12**

**Credit Hours:** (3) **Description** This online course emphasizes a practical application of career theory to school settings to assist all students plan for life beyond high schools. The adoption of career and college readiness standards by an increasing number of states has created a need for school counselors to lead efforts to design and implement comprehensive K-12 career planning programs. This course aims to build specialization as participants develop the skills to design and implement cohesive career guidance programs informed by developmental theory, assessment, and the career decision-making process. A core requirement of this course is for students to work with a high school age student to complete an 8-session career counseling portfolio. Students enrolled in the School counseling program can substitute this course for COUN 7561 Career Counseling (3). **PREREQUISITE(S):** ESCI 1010, PHYS 2110/2111.

### **COUN 8826 - Schl Coun to Close Achvmt Gap \*\***

**Credit Hours:** (3) **Description** The education system is considered the premier vehicle for social mobility, yet student achievement data, graduation and matriculation rates continue to reflect broad societal inequalities. The purpose of this course is to train school counselors to assist marginalized students overcome the societal, familial, and educational barriers that impede positive educational and career outcomes. This course focuses on developing school counselor's leadership and advocacy skills to design strategic guidance programs grounded in evidence based practices that target the achievement gap and facilitate educational equity for all students. **PREREQUISITE(S):** ESCI 1010, MATH 1710 and PHYS 2010, or permission of instructor.

### **COUN 8827 - Capstone College & Career Coun**

**Credit Hours:** (3) **Description** The purpose of this capstone course is to provide students the opportunity to synthesize their knowledge of college and career counseling and develop their expertise in a field based setting of their choice. Students will spend between 45 to 100 hours in the field depending on the nature of their assignment (research or practice). Students are required to secure a field setting and approval from the program coordinator in advance of commencing this class. Students can choose from a broad array of field placements and activities reflecting their interests and intended specialization. Dual enrolled MS school counseling and certificate students do not have to take this class if they take COUN 7646 - Intern Sec Sch Coun (3-6) with a dedicated emphasis in college and career counseling.

### **COUN 8831 - Adv Group Processes**

**Credit Hours:** (3) Former: (CPSY 7731-8731) **Description** (CPSY 7731-8731). Advanced study of group processes as applied to counseling and student services; activities, functions, and dynamics of groups will be studied with actual experience and group work included.

### **COUN 8841 - Adv Coun Thry & Tech**

**Credit Hours:** (3) Former: (CPSY 7784-8784) **Description** (CPSY 7784-8784). Critical analysis of selected theories and techniques of counseling; emphasis on a variety of major theories and systems; provides a thorough theoretical base for developing a consistent approach to professional counseling.

### **COUN 8885 - Legal/Eth Issues Coun**

**Credit Hours:** (3) Former: (CPSY 7785-8785) **Description** (CPSY 7785-8785). Examination of existing and needed legislation affecting counseling and psychology, review of critical court cases; ethical standards of professional counseling and psychological organizations; survey of responsibilities and liabilities. **PREREQUISITE(S):** Permission of the instructor.

### **COUN 8905 - Case Mgmt In Counseling**

**Credit Hours:** (3) **Description** Introduction to case management and procedures used in counseling and other human service settings; development of a conceptual understanding of case management, and ability to apply this

knowledge to different types of populations and different types of treatment settings.

### **COUN 8912 - Intro Psych Rehab Coun**

**Credit Hours:** (3) **Description** Psychiatric rehabilitation concepts and principles, techniques, history, treatment settings and modalities; emphasizing issues central to mental health consumers such as empowerment, the consumer movement, family intervention, cross-cultural issues, recovery and reintegration within the community.

### **COUN 9000 - Dissertation**

**Credit Hours:** (1-9) **Description** Credit may be earned over a period of several semesters. The dissertation may be an organized scientific contribution or a comprehensive analysis of theory and practice in a specific area.

## **Criminology and Criminal Justice**

### **CJUS 6010-6019 - Special Topics in Criminal Justice**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in online course listings.

### **CJUS 6152 - Drug Misuse and Abuse**

**Credit Hours:** 3 Former: 6152 **Description** Cultural and medical aspects of use of alcohol and various other drugs; consideration of roles of law enforcement and corrections in these areas. **PREREQUISITE(S):** Permission of instructor.

### **CJUS 6160 - Forensic Sciences**

**Credit Hours:** (3) **Description** Forensic specialties will be discussed in terms of their history, the scientific rationale upon which each is based, and the problems that may compromise accuracy or validity; introduction to field techniques and analysis of evidence.

### **CJUS 6180 - Corporate and White Collar\*\***

**Credit Hours:** 3 Former: 6180 **Description** Organizational and occupational crime compared to other types of criminality; emphasis on causes, frequency, control, and social impact. **PREREQUISITE(S):** Permission of Instructor. Grades of S, U, or IP will be given.

### **CJUS 6190 - Terrorism in Society and Legal Perspectives\*\***

**Credit Hours:** 3 Former: 6190 **Description** Theoretical and ideological aspects of practice of and response to international and domestic terrorism; terrorism as crime from political, social, economic, historical, and legal perspectives. Grades of A-F, or IP will be given.

### **CJUS 6520 - Criminal Law**

**Credit Hours:** (3) **Description** Substance of the crime, including common-law sources and basic principles, types of offenses, responsibility, justification and excuse, and related areas.

### **CJUS 6531 - Constitutional Law**

**Credit Hours:** 3 Former: 6531 **Description** Issues in constitutional rights related to criminal defendants, including the exclusionary rule, application of First Amendment to criminal law, due process, and equal protection; examination of civil and criminal remedies for protecting and vindicating constitutional rights. **PREREQUISITE(S):** Issues in constitutional rights related to criminal defendants, including the exclusionary rule, application of First Amendment to criminal law, due process, and equal protection; examination of civil and criminal remedies for protecting and vindicating constitutional rights. Grades of S, U, or IP will be given.

### **CJUS 6533 - Juvnl Delinq Thry/Procs**

**Credit Hours:** (3) **Description** Theories of juvenile delinquency, gang activities, and status offenses; history, organization, programs, and procedures of agencies charged with control and prevention of juvenile delinquency including police, juvenile units, juvenile courts, and juvenile correctional agencies.

### **CJUS 6535 - Capital Punishment/America**

**Credit Hours:** (3) **Description** Social science research on death penalty in United States; legal history of death penalty; structure of modern capital trials and appeals; wrongful death convictions; racial disparities; jury decision-making; life histories of capital defendants; deterrence, brutalization, incapacitation; human costs of murder and execution.

### **CJUS 6560 - Criminology of Violence and Culture**

**Credit Hours:** 3 **Description** Analysis on the major ideas on the nature of violence; theoretical paradigms for examining the nexus between violence and society. Understanding social factors which shape violence and how the context of violent actions contribute to understanding. Varying types of violence will be highlighted as to understand intent and cultural relevance.

### **CJUS 6565 - Intimate Partner Violence and Victimization**

**Credit Hours:** 3 Former: 6565 **Description** Covers the types of offenders, victims, and victimizations that can occur in intimate partner violence. Analyzes specific policy recommendations within the realm of policing, courts, and corrections necessary to manage and address intimate partner violence. N/A

### **CJUS 6570 - Gender, Crime, and Justice in America**

**Credit Hours:** 3 **Description** Gender in the American system of criminal justice; examining how practices of criminal justice reflect societal organization, conflict, and social change.

### **CJUS 7100 - Criminal Justice Administration\*\***

**Credit Hours:** 3 Former: 7100 **Description** Examination of the structure and interrelationship of the major components of the criminal justice system, with an emphasis on the impact of social and political forces on roles and functions of criminal justice agencies. **PREREQUISITE(S):** Permission of instructor.

### **CJUS 7110 - Independent Study**

**Credit Hours:** 1-6 Former: 7110 **Description** Individual directed research/readings in special areas of interest in the field of criminal justice. May be repeated for a maximum of 6 credit hours. **PREREQUISITE(S):** Permission of instructor

### **CJUS 7128 - Research Methods in Criminal Justice\*\***

**Credit Hours:** 3 Former: 7128 **Description** Principles of social science research as applied to the study of the criminal justice system; sampling techniques and research strategies; emphasis on the development of research skills enabling the

student to conduct an independent research project.

**PREREQUISITE(S):** Permission of instructor.

### **CJUS 7129 - Advanced Stat In Cj**

**Credit Hours:** (3) **Description** Introduction to intermediate and advanced topics related to statistical analysis of data from the National Archive of Criminal Justice Data; emphasis on Bureau of Justice Statistics data describing principal activities of the system and on complex data sets or those showing special promise for informing theoretical issues.

**PREREQUISITE(S):** Permission of instructor.

### **CJUS 7130 - Crime Analysis and Criminal Behavior\*\***

**Credit Hours:** 3 Former: 7130 **Description** An in-depth look at the traits of individuals and groups that can be used to define types of criminal behavior and/or types of crime. An analysis of the relationship between psychology and crime.

**PREREQUISITE(S):** Permission of instructor.

### **CJUS 7131 - Research Practicum in Criminal Justice**

**Credit Hours:** 1-6 Former: 7131 **Description** The student will be exposed to development, implementation, and/or analysis of research methodology. Each student will work under direction of one faculty member on an experimental, theoretical or applied research study. May be repeated for a maximum of 6 credit hours. May be repeated for a maximum of 6 credit hours **PREREQUISITE(S):** Permission of instructor.

### **CJUS 7141 - Reading For Comps**

**Credit Hours:** (1-6) **Description** Arranged on an individual basis for Criminology and Criminal Justice graduate students only and directed by faculty. NOTE: Criminology and Criminal Justice majors may not use this course to fulfill degree requirements.

### **CJUS 7150 - Intrnshp Criminl Justice**

**Credit Hours:** (3-6) **Description** Experience in a criminal justice setting through assignment to an enforcement, judicial, or correctional agency under joint supervision of agency officials and university faculty.

### **CJUS 7160 - Sem Cj Administration**

**Credit Hours:** (3) **Description** Theories of organization with emphasis on structures, principles, techniques, and processes of criminal justice agencies; factors affecting behavior within such organizations; motivation, leadership, group dynamics, conflict management, unionization, selection, training, performance evaluation, organizational change, and political factors in public agency operation. **PREREQUISITE(S):** Approval of instructor and chair

### **CJUS 7161 - Intervention Strategies \*\***

**Credit Hours:** (3) **Description** Development of intervention, prevention, and suppression strategies by criminal justice agencies; role of social and political institutions and forces on design and implementation of strategies; emphasis on how design and implementation impact communities and residents. **PREREQUISITE(S):** Permission of instructor.

### **CJUS 7190-7199 - Special Topics in Criminal Justice**

**Credit Hours:** (3) **Description** Systematic and comprehensive examination of important and timely issues and development in the field of criminal justice. May be repeated for a maximum of 6 hours. **PREREQUISITE(S):** permission of instructor.

### **CJUS 7460 - Race, Ethnicity, and Gender\*\***

**Credit Hours:** 3 Former: 7460 **Description** This class examines the role that race, ethnicity, and gender play on the formation of criminal justice, including the intersectionality between race, class, and gender and how these factors affect our understanding of crime and victimization. The course also discusses how prevailing social attitudes, values, stereotypes, and beliefs on race, ethnicity, class, and gender inform the development of policy and practice within law enforcement, courts, and corrections. **PREREQUISITE(S):** Permission of instructor.

### **CJUS 7510 - Law And Society**

**Credit Hours:** (3) **Description** Examination of law as a system of control and as a mechanism for the resolution of conflict; relationship of law to political, economic, and social systems critically analyzed; the development of the legal profession.

### **CJUS 7523 - Concepts of Criminal Law**

**Credit Hours:** 3 Former: 7523 **Description** Social foundation and principles on which our system of criminal law is based. **PREREQUISITE(S):** Permission of instructor.

### **CJUS 7535 - Seminar in Capital Punishment \*\***

**Credit Hours:** (3) **Description** In depth study of the death penalty in the United States, with focus on four areas: history of death penalty in U.S.; legal issues and rulings; current social science research; effects of homicide and capital punishment on society.

### **CJUS 7541 - Criminological Theory\*\***

**Credit Hours:** 3 Former: 7541 **Description** An overview of historical, sociological, biological, and economic theories of crime causation; particular attention will be paid to critically analyzing each of the theories presented in terms of research findings. **PREREQUISITE(S):** Permission of instructor.

### **CJUS 7542 - Victimology\*\***

**Credit Hours:** 3 Former: 7542 **Description** An overview of the study of crime victims and the process, etiology, and consequences of criminal victimization, with focus on the types of crime victims, theories of victimization, and the victim's treatment within the criminal justice system using national data as well as recent research findings.

### **CJUS 7570 - Legal Issues in CJ Administration**

**Credit Hours:** 3 Former: 7570 **Description** Relationship between legal and constitutional issues and concepts of ordered liberty and administration of justice; application of legal methodology to analysis of current issues in constitutional rights and remedies.

### **CJUS 7900 - Graduate Capstone**

**Credit Hours:** 3 **Description** This course is designed to link and evaluate content students have learned in the graduate program. Students will be assessed through the course as they prepare their area comprehensive paper. Through the course students will be assessed on Research Methodology, Criminological Theory, Social Science Statistics, Administration, and Intervention Strategies. **PREREQUISITE(S):** CJUS 7100, CJUS 7161, CJUS 7128, CJUS 7541, SUAP 7100.



## CJUS 7996 - Thesis

**Credit Hours:** 1-6 Former: 7996 **Description** Course provides hours to students to work on Masters Thesis. Grades of S, U, or IP will be given.

## CJUS 8100 - Cj Administration

**Credit Hours:** 3 Former: 8100 **Description** Examination of the structure and interrelationship of the major components of the criminal justice system, with an emphasis on the impact of social and political forces on roles and functions of criminal justice agencies. **PREREQUISITE(S):** Permission of instructor. Grades of A-F, or IP will be given.

## CJUS 8110 - Ind Dir Study

**Credit Hours:** (1-4) **Description** Individual directed research/readings in special areas of interest in the field of criminal justice. May be repeated for a maximum of 4 credit hours. May be repeated for a maximum of 4 credit hours **PREREQUISITE(S):** CIVL 7170 or permission of instructor.

## CJUS 8141 - Reading For Comps

**Credit Hours:** (1-6) **Description** Arranged on an individual basis for Criminology and Criminal Justice graduate students only and directed by faculty.

## CJUS 8150 - Intrnshp Criminl Justice

**Credit Hours:** (3-6) **Description** Experience in a criminal justice setting through assignment to an enforcement, judicial, or correctional agency under joint supervision of agency officials and university faculty. **PREREQUISITE(S):** Permission of instructor. Grades of S, U, or IP will be given.

## Dance

### DANC 6000-6029 - Special Topics in Dance

**Credit Hours:** (1-3) **Description** Topics are varied. May be repeated for maximum of 9 hours. **PREREQUISITE(S):** Permission of instructor.

### DANC 6101 - Dance Repertory

**Credit Hours:** (3) **Description** Exploration of stylistic, technical, and expressive elements in rehearsal and performance; may include notated works, faculty, and guest

artist choreography. May be repeated for maximum of 9 hours. (Offered alternate years). May be repeated for maximum of 9 hours. **PREREQUISITE(S):** Permission of instructor. Grades of A-F, or IP will be given.

### DANC 6201 - Dance Composition

**Credit Hours:** (3) **Description** Investigation of movement sources and development of elements of choreographic craft; emphasis on solo and duet work. May be repeated for maximum of 6 hours with permission of instructor. (Offered alternate years). May be repeated for maximum of 6 hours with permission of instructor. Grades of S, U, or IP will be given.

### DANC 6202 - Adv Dance Composition

**Credit Hours:** (3) **Description** Continued investigation of movement sources and choreographic craft from concept development through rehearsal and performance; emphasis on group forms and working with music. May be repeated for a maximum of 6 hours credit. (Offered alternate years). May be repeated for a maximum of 6 hours credit. Grades of A-F, or IP will be given.

### DANC 6203 - Dance Composition III

#### **Credit Hours:** 2 **Description**

**Description:** Continued investigation of movement sources and choreographic craft from concept development through rehearsal and performance; emphasis on group forms and working with music. NOTE: May be repeated for a maximum of 4 hours credit. (Offered alternate years). Prerequisite: DANC 6201, or permission of the instructor. \$20 per credit hour. Up to 4 credit hours **PREREQUISITE(S):** DANC 6201 or permission of instructor.

### DANC 6301 - Directed Studies Dance

**Credit Hours:** (1-3) **Description** Individual study, research, or practicum. May be repeated for maximum of 12 hours. May be repeated for maximum of 12 hours **PREREQUISITE(S):** Permission of the instructor.

### DANC 6402 - Dance Ed/Diverse Setting

**Credit Hours:** (3) **Description** Theory, methods, and materials for teaching Modern and Creative Dance in schools, dance studios, arts programs, and community settings; includes current research in aesthetic education and

curriculum development. Offered alternate years.

**PREREQUISITE(S):** Permission of instructor.

### **DANC 7830 - Contemporary Dance Practice**

**Credit Hours: 3** **Description** This course involves bodily listening, regular practicing, and all-out dancing through active participation with movement concepts and vocabulary for students seeking more significant experience and facility with contemporary physical practice. Course material will reference writings, concepts, choreography, movement principles, improvisation techniques, and creative process inside of physical practice. May be repeated for a maximum of 9 credit hours. \$20 per credit hour. Yes, up to 9 credit hours.

## **Early Childhood Education**

### **ECED 6510 - Early Child Prgms/Pr**

**Credit Hours: (3)** **Description** Applying professional knowledge to early childhood education values and principles, programs and practices, issues, problems, and trends; exploring early childhood teacher roles and responsibilities through observations in multicultural early childhood program settings. Field experience is required. **PREREQUISITE(S):** TEP admission or permission of instructor.

### **ECED 6520 - Pln/Fclt Sci Lrng/Dev**

**Credit Hours: (3)** **Description** Planning, implementing, and evaluating programs to facilitate young children's social learning from birth-age 8; socialization, social science skills, knowledge, and dispositions in context of integrating content instruction and learning. Field experience is required. **PREREQUISITE(S):** TEP admission or permission of instructor.

### **ECED 6530 - Pln/Fclt Math/Sci Lrng**

**Credit Hours: (3)** **Description** Provides knowledge, skills, and dispositions necessary to plan for and facilitate development and learning of physical, logico-mathematical, and social knowledge of mathematics and science for children from birth through 8 years. Field experience is required. **PREREQUISITE(S):** TEP admission or permission of instructor.

### **ECED 6540 - Pln/Fclt Infnt/Tdlr Dev**

**Credit Hours: (3)** **Description** Models, principles, curriculum, and practices of developmentally appropriate

infant/toddler caregiving; emphasis on teacher's knowledge of child development, skills, and dispositions necessary to foster infant and toddler development in group care settings. Field experience is required. **PREREQUISITE(S):** ECED 6510 and TEP admission or permission of instructor.

### **ECED 7100 - Foundtn/Early Child Ed**

**Credit Hours: (3)** **Description** Examination of historical, philosophical, psychological, and societal factors influencing development, modification, and implementation of programs for young children and their families.

### **ECED 7101 - Early Child Teach/Learn**

**Credit Hours: (3)** **Description** Incorporates knowledge of child development, early childhood curriculum models, and instructional methodologies to more effectively meet educational needs of young children in diverse environments.

### **ECED 7102 - Obs/Asmt Intsv Chld Stg**

**Credit Hours: (3)** **Description** Advanced level course on assessing developmental perspectives on measurement and evaluation in early childhood years. Consideration is given to standardized tests, observations, checklists, rating scales, and tests designed by teachers; their advantages and disadvantages for use with young children; and professional ethical issues regarding evaluating young children. Field experience is required. **PREREQUISITE(S):** EDPR 7110

### **ECED 7103 - Ltrcy Dvlp/Erly Chldhd**

**Credit Hours: (3)** **Description** Advanced level of theoretical, cognitive, and developmentally appropriate practice in language development and literacy processes from birth to age 8. Research studies on instructional strategies and assessment on literacy and language acquisition and development from sociocultural perspectives.

### **ECED 7104 - Play/Erly Chldhd Dev**

**Credit Hours: (3)** **Description** Analysis of role of play in young children's development and learning from birth through age 8; developmentally appropriate applications of play theory and research to young child's physical, intellectual, language, social, and emotional development and learning.

### **ECED 7107 - Constructivism In ECED**

**Credit Hours:** (3) **Description** Analysis of constructivist theory and research with emphasis on implications for early childhood curriculum, the ecology of the learning environment, and the role of the teacher.

**PREREQUISITE(S):** Licensure and sexperience in early childhood education or a related area.

### **ECED 7108 - Sem Erly Chldhd Ed**

**Credit Hours:** (3) **Description** Analysis of contemporary issues and trends in the field of early childhood education. May be repeated for a maximum of 9 credit hours with a change in topic.

### **ECED 7109 - Admin Prog Young Child**

**Credit Hours:** (3) **Description** Enhances knowledge, skills, and dispositions for management, leadership, and child advocacy; applies knowledge of child development, appropriate practices, early childhood standards, and management competencies while examining programming for children involving families, personnel management, fiscal responsibilities, and accreditation processes.

### **ECED 7113 - Rsrch/Erly Chd/Math/Sci**

**Credit Hours:** (3) **Description** Current topics in the areas of early childhood instruction and curriculum at advanced levels, focusing on current issues and research in early learning and teaching of mathematics and science. **PREREQUISITE(S):** EDPR 7521 or equivalent, ECED 7100 -ECED 8100

### **ECED 7115 - Rdng Erly Chld Ed Rsrch**

**Credit Hours:** (3) **Description** Survey and analysis of contemporary issues and trends in early childhood education research; translating research into practical applications in early childhood settings.

### **ECED 8100 - Foundtn/Early Child Ed**

**Credit Hours:** (3) **Description** Examination of historical, philosophical, psychological, and societal factors influencing development, modification, and implementation of programs for young children and their families.

### **ECED 8101 - Early Child Teach/Learn**

**Credit Hours:** (3) **Description** Incorporates knowledge of child development, early childhood curriculum models, and

instructional methodologies to more effectively meet educational needs of young children in diverse environments.

### **ECED 8102 - Obs/Asmt Intsv Chld Stg**

**Credit Hours:** (3) **Description** Advanced level course on assessing developmental perspectives on measurement and evaluation in early childhood years. Consideration is given to standardized tests, observations, checklists, rating scales, and tests designed by teachers; their advantages and disadvantages for use with young children; and professional ethical issues regarding evaluating young children. Field experience is required. **PREREQUISITE(S):** EDPR 7110

### **ECED 8103 - Ltrcy Dvlp/Erly Chldhd**

**Credit Hours:** (3) **Description** Advanced level of theoretical, cognitive, and developmentally appropriate practice in language development and literacy processes from birth to age 8. Research studies on instructional strategies and assessment on literacy and language acquisition and development from sociocultural perspectives.

### **ECED 8104 - Play/Erly Chldhd Dev**

**Credit Hours:** (3) **Description** Analysis of role of play in young children's development and learning from birth through age 8; developmentally appropriate applications of play theory and research to young child's physical, intellectual, language, social, and emotional development and learning.

### **ECED 8107 - Constructivism in ECED**

**Credit Hours:** (3) **Description** Analysis of constructivist theory and research with emphasis on implications for early childhood curriculum, the ecology of the learning environment, and the role of the teacher.

**PREREQUISITE(S):** Licensure and experience in early childhood education or a related area.

### **ECED 8108 - Sem Erly Chldhd Ed**

**Credit Hours:** (3) **Description** Analysis of contemporary issues and trends in the field of early childhood education. May be repeated for a maximum of 9 credit hours with a change in topic.

### **ECED 8109 - Admin Prog Young Child**

**Credit Hours:** (3) **Description** Enhances knowledge, skills, and dispositions for management, leadership, and child

advocacy; applies knowledge of child development, appropriate practices, early childhood standards, and management competencies while examining programming for children involving families, personnel management, fiscal responsibilities, and accreditation processes.

### ECED 8110 - Readings Early Chld

**Credit Hours:** (1-3) **Description** Individually directed reading; written report required. May be repeated for a maximum of 9 credits. **PREREQUISITE(S):** Permission of instructor Grade of S, U, or I will be given

### ECED 8112 - Research Early Chld Ed

**Credit Hours:** (1-6) **Description** Collaborative research with faculty, including planning, design, management, analysis, and reporting of research. May be repeated for a maximum of 12 credit hours. **PREREQUISITE(S):** Minimum of 12 hours in concentration and permission of instructor. Grades of S, U, or I will be given.

### ECED 8113 - Rsrch/Erly Chd/Math/Sci

**Credit Hours:** (3) **Description** Current topics in the areas of early childhood instruction and curriculum at advanced levels, focusing on current issues and research in early learning and teaching of mathematics and science. **PREREQUISITE(S):** EDPR 7521 or equivalent, ECED 7100-ECED 8100

### ECED 8115 - Rdnng Erly Chld Ed Rsrch

**Credit Hours:** (3) **Description** Survey and analysis of contemporary issues and trends in early childhood education research; translating research into practical applications in early childhood settings.

## Earth Sciences

### ESCI 6122 - Soils & Soil Processes

**Credit Hours:** (3) Former: (GEOG 6122) **Description** (GEOG 6122). Processes and dynamics of soil profile development; major models of soil development examined and applied to soil genesis in Tennessee; application of soil techniques to archaeology, planning, earth sciences, and soil conservation and erosion problems; emphasis on field and laboratory techniques with field work in soil mapping and soil taxonomy. Two lecture, two laboratory hours per week.

### ESCI 6201 - Urbanization/Environmt

**Credit Hours:** (3) Former: (GEOG 6201) **Cross listing** (Same as PLAN 6201) **Description** (GEOG 6201; same as PLAN 6201). A study of the ways humans have changed the natural environment by urbanization and how physical features and processes influence the development and function of cities. **PREREQUISITE(S)** or **COREQUISITE(S):** ESCI 6515, ESCI 6525 and an elective course approved by GIS Certificate Advisory Committee or permission of instructor

### ESCI 6202 - Geomorphology

**Credit Hours:** (4) Former: (GEOL 6202) **Description** (GEOL 6202). Description, origin, and interpretation of landforms and their relationships to underlying structure and geologic history; processes acting on earths surface including active tectonics, weathering, mass-wasting, climate change, and fluvial, shoreline, and glacial processes. Three lecture, two laboratory hours per week; \$25 material fee. \$25 material fee.

### ESCI 6204 - Environmental Science

**Credit Hours:** 3 **Cross listing** BIOL 6204 **Description** This course is designed to bring the student to an applied and informed awareness of responsible behavior toward our environment and the role of the human race therein. The content will include a study of the philosophical and scientific basis for the study of ecosystems and the environment, the nature of ecosystems, the techniques used to study the environment, the origin and development of current environmental problems, the interdisciplinary nature of environmental studies, the processes of critical thinking and problem solving, and the moral and ethical implications of environmentally-mandated decisions.

### ESCI 6211 - Physical Hydrology

**Credit Hours:** (4) Former: (GEOL 6211) **Cross listing** (same as CIVL 6211). **Description** (GEOL 6211). Physical hydrogeology and development of groundwater; groundwater in hydrologic cycle; aquifer characteristics and tests. Three lectures and two laboratory hours each week; \$25 material fee. \$25 material fee.

### ESCI 6213 - Field Method/Hydrology

**Credit Hours:** (3) Former: (Geol 6213) **Cross listing** (same as CIVL 6213). **Description** (Geol 6213). Introduction to and practice of field methods in solving hydrologic problems.

## ESCI 6214 - Climatology

**Credit Hours:** (3) Former: (GEOG 4211) **Description** (GEOG 4211). Climatic elements and methods of data analysis; applications of climatology in agriculture, health, economics, and architecture.

## ESCI 6215 - Physical Climatology

**Credit Hours:** (3) Former: (GEOG 6215) **Description** (GEOG 6215). Components of earth's energy balance; emphasis on solar radiation, heat transfer, and evapotranspiration. **PREREQUISITE(S):** Permission of the instructor. Grades of S, U, or IP will be given.

## ESCI 6216 - Synoptic Meteorology

**Credit Hours:** (3) **Description** Physical processes in the atmosphere applied to analysis and interpretation of synoptic (regional) scale systems using weather maps, upper-air soundings, satellite and radar imagery, and computer model output; introduction to techniques used in weather forecasting. **PREREQUISITE(S):** Permission of instructor.

## ESCI 6231 - Water Science and Management

**Credit Hours:** (3) Former: (GEOG 6231) *Cross listing* (Same as PLAN 6231) **Description** (GEOG 6231; same as PLAN 6231). Study of hydrologic processes and their application to needs of cities, industry, agriculture, and recreation.

## ESCI 6241 - Biogeog/GIS Analyses/Ecology

**Credit Hours:** (3) Former: (GEOG 6241) *Cross listing* (Same as BIOL 6241) **Description** (GEOG 6241). (Same as BIOL 6241). Basic principles of interaction between geography, organism diversity and evolution; physical factors limiting species distribution, theories of island biogeography, geographical modes of speciation. Laboratories introduce principles of GIS, basic functions of ArcGIS, and other programs relevant to ecological studies. Two lecture hours, two laboratory hours per week. **PREREQUISITE(S):** Permission of instructor. Grades of A-F, or IP will be given.

## ESCI 6251 - Environmental Hazards

**Credit Hours:** (3) Former: (GEOG) **Description** (GEOG). Environmental hazard and disaster experiences to investigate the nature, impact, and social responses to environmental hazards; focus is placed on relationship between nature, society,

and technology in how people and places perceive, experience, and cope with environmental hazards. Grades of S, U, or IP will be given.

## ESCI 6252 - Global Environ Change

**Credit Hours:** (3) Former: (GEOG 6252) **Description** (GEOG 6252). Understanding change occurring on the global scale from an interdisciplinary perspective; includes characteristics of natural systems, magnitude of human alteration of environmental systems, history of natural changes in climate and landscape, and the impact of these changes on our lives. **PREREQUISITE(S):** ESCI (GEOG) 4521/ESCI 6521 or permission of instructor. Grades of A-F, or IP will be given.

## ESCI 6261 - Plan/Sustainable Cities/Region

**Credit Hours:** (3) **Description** Multidisciplinary and multi-scaled approach to understanding the sustainability of natural and built environments in planning cities and regions; methods for measuring sustainability; emerging development concepts and practices; technology, efficiency, social equity and public health implications of sustainability; sustainable urban/regional form of the future. **PREREQUISITE(S):** Permission of instructor.

## ESCI 6270 - Ancient Human Soc/Envir Chng

**Credit Hours:** (3) *Cross listing* (Same as ANTH 6270) **Description** (Same as ANTH 6270). Examination of past people and their environments from the Ice Age to recent times; archaeological and paleoecological data. Three lecture hours per week. **PREREQUISITE(S):** ESCI 6101, ESCI 6401, and permission of instructor.

## ESCI 6301 - Archaeology of the Americas

**Credit Hours:** (3) **Description** Intensive study of various prehistoric cultures of the Americas from earliest times until historic contact. **PREREQUISITE(S):** ANTH 1100, ANTH 1200, or permission of instructor.

## ESCI 6307 - Thematic Studies/China

**Credit Hours:** (3) **Description** Geographic studies of the people, history, culture, and government of China, as well as analysis of role that China plays in the global economy.

### ESCI 6308-6312 - Special Topics in Geography Techniques

**Credit Hours:** (3) **Description** Varied topics focused on spatial data, tools, and techniques provide the focus for this course. May be repeated for a maximum of 6 hours with a change in topic.

### ESCI 6325 - Archaeol Fld/Lab Techn

**Credit Hours:** (3) *Cross listing* (Same as ANTH 6325)  
**Description** (Same as ANTH 6325) Field excavation, specimen preparation, use of survey instruments and photography, map making, archaeological record keeping; methods and techniques in archaeological laboratory analysis; emphasis on organization and supervision of laboratory procedures.

### ESCI 6332 - Intro To Geochemistry

**Credit Hours:** (3) Former: (GEOL 6332) **Description** (GEOL 6332). Geological and chemical processes that govern or control the migration and distribution of the elements and atomic species in the earth in space and time.

### ESCI 6335 - Analysis of Stone Artifacts

**Credit Hours:** (3) *Cross listing* (Same as ANTH 6335) **Description** Much of the prehistoric cultural record is pieced together through the analysis of stone artifacts. The class outlines the basics of stone "lithics" artifact analysis through an in-depth study of current techniques, instrumentation, and theory. Lecture is augmented by class discussion and hands-on experimentation "flintknapping."

### ESCI 6341 - Aqueous Geochemistry

**Credit Hours:** (3) Former: (GEOL 6341) *Cross listing* (same as CIVL 6341). **Description** (GEOL 6341). Physical chemistry of aqueous solutions as it applies to geochemical processes on earth's surface.

### ESCI 6350 - Archaeology of Collapse

**Credit Hours:** (3) *Cross listing* (Same as ANTH 6350)  
**Description** (Same as ANTH 6350). Emphasis on archaeology of regional politics and archaic states throughout the world. Overview of social and political collapse of complex societies. **PREREQUISITE(S):** Permission of instructor and completion of special registration

### ESCI 6352 - Archaeology/World Prehistory

**Credit Hours:** (3) **Description** Global survey of cultures from first humans to early civilizations. **PREREQUISITE(S):** Permission of instructor.

### ESCI 6365 - Cultural Resource Mgmt

**Credit Hours:** (3) Former: (ANTH 4375-6375) **Description** (ANTH 4375-6375). The majority of archaeological work in North America is conducted in compliance with tribal, state, and federal legislation in Cultural Resource Management (CRM). The ultimate goals of this course is to prepare students for CRM roles and responsibilities through learning the historic development, current legislation, practices and real world skills needed to conduct CRM work.

### ESCI 6370-6379 - Special Topics in Archaeology

**Credit Hours:** (3) **Description** Addresses various areas of archaeology. May be repeated for a maximum of 6 hours credit with a change of topic.

### ESCI 6430 - Social and Economic Geography with GIS

**Credit Hours:** (3) *Cross listing* (same as PLAN 6430). **Description** Geographic analysis of social and spatial characteristics of economic activities and their distribution. Applications of data analysis and output using ArcGIS software package.

### ESCI 6431 - Urban Geography

**Credit Hours:** (3) *Cross listing* PLAN 6431 **Description** Geography of urban processes and forms. Cultural, social, economic, and political aspects of the contemporary city. Standard Letter

### ESCI 6443 - Transportation Planning

**Credit Hours:** (3) Former: (GEOG 6443) *Cross listing* (Same as PLAN 6443) **Description** (GEOG 6443; same as PLAN 6443). Planning for various transportation modes and networks and impact on urban land-use and contemporary development problems.

### ESCI 6511 - Remote Sensing/Environ

**Credit Hours:** (3) Former: (GEOG 6511, GEOL 6512)  
**Description** (GEOG 6511, GEOL 6512). Introduction to theory and application of using color, infrared, thermal, and RADAR images generated from satellite and aerial photographs for geographic, geologic, environmental, and planning purposes. Two lecture hours, two laboratory hours per week. **PREREQUISITE(S):** Permission of instructor.

### ESCI 6512 - Structural Geology

**Credit Hours:** (4) Former: (GEOL) **Description** (GEOL) Structures of the crust; geometry of folds and faults, rock deformation, criteria for recognizing structures, solution of geometrical problems. Three lecture hours, two laboratory hours per week. Course fee: \$25.

### ESCI 6515 - Geographic Info Science \*\*

**Credit Hours:** (3) Former: (GEOG 6515) *Cross listing* (Same as PLAN 6515) **Description** (GEOG 6515; same as PLAN 6515). Introduction to theoretical and practical understanding of fundamental GIS concept, capabilities, and applications with emphasis on nature of geographic data and issues of data input, data models, database design, spatial analysis, and data output using ArcGIS software. Three lecture, two laboratory hours per week. **PREREQUISITE(S):** Permission of department chair.

### ESCI 6521 - Quantitative Methods

**Credit Hours:** (3) Former: (GEOG 6521) *Cross listing* (Same as PLAN 6521) **Description** (GEOG 6521; same as PLAN 6521). Introduction to quantitative methods in spatial analysis.

### ESCI 6525 - Adv Geographic Info Sci

**Credit Hours:** (3) Former: (GEOG 6525) **Description** (GEOG 6525). Introduction to design and implementation of spatial analysis approaches within context of GIS technology; further development of a sound understanding of operational basis of modern GIS technology. **PREREQUISITE(S):** SCMS 3711, or equivalent.

### ESCI 6526 - Advanced Remote Sensing

**Credit Hours:** (3) **Description** Practical exercises and datasets to elaborate on fundamental skills introduced in ESCI 4511. Topics include advanced image enhancement techniques, hyper-spectral image analysis, change detection, and analysis of active sensor system (LiDAR). **PREREQUISITE(S):** ECON 2020.

### ESCI 6531 - Field Methods/Geography

**Credit Hours:** (3) Former: (GEOG 6531) **Description** (GEOG 6531). Basic methods of geographic analysis used in classifying, analyzing, and reporting field-generated data including field mapping, sampling procedures, questionnaires, and archival and public document research. One and one-half lecture hours, three laboratory hours per week; \$25 material fee. \$25 material fee.

### ESCI 6535 - Modular GIS

**Credit Hours:** (3) **Description** Implementation of modular learning content within the various GIS domains such as mapping and visualization, analytics, scripting and development, sharing GIS content, field mobility, real-time monitoring and discipline specific topics such as public safety, public health, business and geology, etc. Course can not be repeated. **PREREQUISITE(S):** ESCI 4515 - ESCI 6515 or ESCI 4525 - ESCI 6525 or permission of instructor.

### ESCI 6610-6619 - Special Topics in Geography

**Credit Hours:** (3) **Description** Topics are varied. May be repeated for a maximum of 6 hours credit with a change of topic. **PREREQUISITE(S):** Permission of instructor.

### ESCI 6680 - Applied Archaeology/Museums

**Credit Hours:** (3) *Cross listing* (Same as ANTH 6680) **Description** (Same as ANTH 6680). Representations of cultural heritage in a broad array of public venues; repatriation, cultural patrimony, cultural resource management, civic engagement, rights and responsibilities of stakeholders, public involvement in museum representations, performance and education, culture and memory. **PREREQUISITE(S):** SCMS 2710 or MATH 1530 or equivalent as approved by instructor.

### ESCI 6700 - Earth Science Internship

**Credit Hours:** (1-9) Former: (GEOG 6700) **Description** (GEOG 6700). Provides opportunity to gain experience working with an agency in which Department of Earth Sciences concentrations can be utilized. May be repeated for a maximum of 9 hours. Credit allowed only after acceptance of report. na 9

### ESCI 6701 - ESCI Field Excursions

**Credit Hours:** (1-2) Former: (GEOL 6701) **Description** (GEOL 6701). Conducted field trips during spring vacation. About 30 hours of field work will follow 2-4 hours of lectures. Open to non-majors. Among the areas that may be included are Ouachita-Arbuckle-Wichita mountains of Oklahoma; Ouachita and adjacent mineral districts; central and southern Appalachians; and Gulf Coastal Plain. Check Online course listings for specific location. NOTE: May be repeated for a maximum of 8 credit hours. \$25 materials fee. NOTE: May be repeated for a maximum of 8 credit hours. \$25 materials fee.

### ESCI 7000 - Art Of Earth Sciences

**Credit Hours:** (3) **Description** Introduction to earth science research; includes project design, abstract and proposal preparation, and presentation skills.

### ESCI 7010-7019 - Special Topics in Geology

**Credit Hours:** (3) May be repeated for a maximum of 6 hours credit with a change of topic.

### ESCI 7100 - Basin Analysis

**Credit Hours:** (3) Former: (GEOL 7100) **Description** (GEOL 7100). Integration of depositional models using subsurface correlation, seismic stratigraphy, and biostratigraphy in analysis of basin-scale sedimentary systems and their fluids. Two lecture, two laboratory hours per week. \$25 materials fee. \$25 materials fee. **PREREQUISITE(S):** ECON 7100 or permission of instructor.

### ESCI 7101 - Regional Planning

**Credit Hours:** (3) *Cross listing* (Same as PLAN 7101) **Description** (Same as PLAN 7101) Origins of regionalism; emergence of new regionalism; delineating and designing the region; economic, ecologic, and social principles for planning the regional city; public policy in region-building; regional planning organization and governance; the functions and problems of regional plan preparation, and plan implementation. **PREREQUISITE(S):** ECON 7310-ECON 8310 or permission of instructor.

### ESCI 7102 - Electron Beam Analysis

**Credit Hours:** (3) Former: (GEOL 7102) **Description** (GEOL 7102). Introduction to scanning electron microscopy and electron beam microanalysis. One lecture, four laboratory hours per week. \$25 materials fee. \$25 materials fee.

**PREREQUISITE(S):** ECON 7100 or permission of instructor.

### ESCI 7120 - Seminar/Geomorphology

**Credit Hours:** (3) Former: (GEOG 7120-8120) **Description** (GEOG 7120-8120). Analysis and application of major geomorphic models; threshold, episodic, time-space, systems, and magnitude; frequency principles examined in both classroom and field; dating techniques applied to geomorphic interpretations; individual and team projects required.

**PREREQUISITE(S):** ECON 7310-ECON 8310 or permission of instructor.

### ESCI 7131 - Seminar in Extreme Weather

**Credit Hours:** (3) **Description** Advanced study in the physical processes important in the formation of blizzards, ice storms, thunderstorms, tornadoes, hurricanes, floods, and heat waves. Reconstruction of past extreme weather events.

**PREREQUISITE(S):** ECON 7320-ECON 8320 or permission of instructor.

### ESCI 7160 - Tectonics

**Credit Hours:** (3) **Description** Advanced analysis of principles and geometry of plate tectonics; development of plate tectonic theory; relationship between plate motions and regional tectonics; structural, stratigraphic, magmatic and geophysical features of various tectonic regimes.

**PREREQUISITE(S):** ESCI 6512.

### ESCI 7170 - Sedimentary Petrology

**Credit Hours:** (4) Former: (GEOL 7170, 7352) **Description** (GEOL 7170, 7352). Sedimentary rocks in the field, hand specimen, and through the microscope with view of explaining sedimentary rock classification, post depositional changes that occur in sediments, and the bearing these factors have on geology as a whole. Three lecture and two laboratory hours per week. \$25 materials fee. \$25 materials fee.

**PREREQUISITE(S):** ECON 6810 and 7010 or equivalents of both.

### ESCI 7190 - Igneous/Metamorphic Petr

**Credit Hours:** (4) Former: (GEOL 7190) **Description** (GEOL 7190). Description and interpretation of igneous and metamorphic rocks through study of thin sections. Two lecture, four laboratory hours per week. \$25 materials fee. \$25



materials fee. **PREREQUISITE(S):** ECON 7300 or permission of instructor.

### ESCI 7195 - Groundwater Hydraulics

**Credit Hours:** (3) Former: (GEOL 7195) *Cross listing* (Same as CIVL 7195) **Description** (GEOL 7195; same as CIVL 7195). Geological contributions to ground water flow; ground water contribution to water demand and conjunctive use; well hydraulics, design, and construction; pump selection; determine aquifer properties via field well tests.

### ESCI 7197 - Ground Water Qual Cntrl

**Credit Hours:** (3) Former: (GEOL 7197) *Cross listing* (Same as CIVL 7197) **Description** (GEOL 7197; same as CIVL 7197). Analyses of ground water quality and contamination problems; study of multispecies chemical reactions and radioactive and microbiological decay; techniques for monitoring and site remediation of ground water contamination.

### ESCI 7201 - Geographic Environ/Anly

**Credit Hours:** (3) Former: (GEOG 7201-8201) *Cross listing* (Same as PLAN 7302) **Description** (GEOG 7201-8201; same as PLAN 7302). Analytical and qualitative critique of the physical environment with emphasis on environmental quality, including air and water quality standards, soil erosion, solid waste management, and nuisance control.

**PREREQUISITE(S):** ECON 3320, ECON 7300, or ECON 7320-ECON 8320, or permission of instructor.

### ESCI 7202 - Quaternary Geology

**Credit Hours:** (3) Former: (GEOL 7202) **Description** (GEOL 7202). Synthesis of geomorphologic, stratigraphic, and geochronologic methods used to understand global glacial and interglacial climate fluctuations during last two million years.

**PREREQUISITE(S):** ECON 7100 or equivalent, or permission of instructor.

### ESCI 7204 - Prob & Earthquake Haz Anly

**Credit Hours:** (3) *Cross listing* (Same as CIVL 7136, CERI 7204) **Description** (Same as CIVL 7136, CERI 7204) Fundamentals of basic probability, seismicity analysis, ground motion attenuation and site effects, seismic hazard analysis, and uncertainty analysis; students will perform a probabilistic seismic hazard analysis for a region of their interest.

**PREREQUISITE(S):** ECON 7710 or permission of instructor.

### ESCI 7220 - Geochronology

**Credit Hours:** (3) Former: (GEOL 7220) **Description** (GEOL 7220). Study of the methods and application of relative and isotopic dating of rocks, minerals, fossils, sediments, and groundwater. **PREREQUISITE(S):** ECON 7300 or equivalent or permission of instructor.

### ESCI 7221 - River Conservation

**Credit Hours:** (3) Former: (GEOG 7221-8221) **Description** (GEOG 7221-8221). Field-based project studying how stream habitats vary under different hydraulic flow conditions, with lecture-based materials, interactive seminars, fieldwork, and lab work drawing on geography, conservation, geomorphology, hydrology, and ecology.

**PREREQUISITE(S):** ECON 7100 or permission of instructor. Grades of S, U, or IP will be given.

### ESCI 7230 - Exploration Seismology

**Credit Hours:** (4). Former: (ESCI 7404-8404). *Cross listing* (same as CERI CERI 7230 - CERI 8230) **Description** Examines the reflective seismic approach to mineral exploration, and environmental and tectonic imaging; covers seismic data processing, data visualization, and acquisition procedures, including field equipment; hands-on experience analyzing seismic reflection records. Three lecture, two laboratory hours per week. **PREREQUISITE(S):** Permission of instructor.

### ESCI 7231 - Seminar Water Resources

**Credit Hours:** (3) Former: (GEOG 7231-8231) **Description** Issues, problems, and research on selected topics of surface and groundwater, water uses, and fluvial process. May be repeated for a maximum of 6 hours credit with a change of topic.

### ESCI 7240 - Earthquake Surface Processes

**Credit Hours:** (3) Former: (CERI 7240/8240) **Description** (CERI 7240/8240) Overview of the surface and near-surface geological conditions that are associated with earthquake occurrence. Evidence for past large earthquakes as written in the geological record. Hands-on experience will be obtained through field work. **PREREQUISITE(S):** ECON 7125-ECON 8125 or permission of instructor.

## ESCI 7252 - Multihazard Mitigation

**Credit Hours:** (3) Former: (GEOG 7252) **Description** (GEOG 7252). Considers range and types of adjustments communities can participate in to manage risk associated with hazards such as earthquakes, floods, radiological and chemical hazards; emphasizes a multihazard approach to mitigation.

## ESCI 7254 - Archaeology & Hunter Gatherers

**Credit Hours:** (3) **Description** Introduction to hunter-gatherer studies in archaeology and ethnoarchaeology exploring evolutionary theory applied to hunter-gatherer behavior in prehistoric contexts.

## ESCI 7256 - Archaeology & Complex Society

**Credit Hours:** (3) **Description** Advanced study of complex societies from local groups to archaic states. Focus on theoretical and methodological analyses of cultural complexity in prehistory.

## ESCI 7301 - Seminar In Geography

**Credit Hours:** (3) Former: (GEOG 7301-8301) **Description** (GEOG 7301-8301). Regional analysis of selected areas of the world including: the U.S., Canada, Europe, former Soviet Union, Middle America, South America, Asia, Africa, and Oceania. May be repeated with a change in content for a maximum of 6 hours credit. May be repeated with a change in content for a maximum of 6 hours credit.

## ESCI 7310 - Archaeol Theory/Method

**Credit Hours:** (3) Former: (ANTH 7310) **Description** (ANTH 7310). History of archaeology and development of conceptual framework for archaeological data collection and interpretation; current theories and methods including use of allied specialties.

## ESCI 7311 - Public Archaeology

**Credit Hours:** (3) Former: (ANTH 7311) **Description** (ANTH 7311). Roles and responsibilities of the archaeologist in contract and salvage work, in museum research and administration, and in the public dissemination of archaeological information. A review of relevant state and federal legislation.

## ESCI 7312 - Spatial Statistics

**Credit Hours:** (3) Former: (GEOG 7312-8312) **Description** (GEOG 7312-8312). Reviews a range of spatial analytical techniques and their implementation in state-of-the-art spatial statistics software. **PREREQUISITE(S):** ECON 7100 or permission of instructor.

## ESCI 7320 - Spatial Analysis - Earth Sci

**Credit Hours:** (3) **Description** Intensive hands-on collection, processing, and analysis of spatial data at a variety of scales and settings. Introduction to collection techniques, computer processing methods, and statistical evaluation of spatial data. 2 hours lecture, 2 hours lab. \$25.00 course fee. \$25.00 course fee. **PREREQUISITE(S):** ECON 7310-ECON 8310 or permission of instructor.

## ESCI 7325 - Quat Paleoeco/Env Recon

**Credit Hours:** (4) **Description** Advanced study of cultural ecology in past environmental regimes; emphasis on interdisciplinary approach to archaeological data and their relationship with the quaternary environment. Two lecture, four laboratory hours per week **PREREQUISITE(S):** ECON 7310-ECON 8310 or permission of instructor.

## ESCI 7327 - Lithic Artifact Analysis

**Credit Hours:** (3) **Description** Introduction to lithic artifact analysis and prehistoric stone tool technologies; raw material studies; typologies; technological studies; functional studies; hands-on experience with basics of flintknapping, debitage analysis, and use-wear analysis. **PREREQUISITE(S):** ECON 7320-ECON 8320 or permission of instructor.

## ESCI 7333 - Adv Archaeol Field Tech

**Credit Hours:** (1-6) **Description** Provides basic understanding of governmental archaeology, including phase I and II research; site survey, testing, and mapping; surface collections; and rapid site assessment.

## ESCI 7345 - Geoarchlg Material Sci

**Credit Hours:** (4) **Description** Review of issues, problems, and research on selected topics of material science for a variety of Earth Sciences applications. Two lecture, four laboratory hours per week. \$25 materials fee. \$25 materials fee. **PREREQUISITE(S):** ECON 7300 or permission of instructor.

### ESCI 7353 - Geodynamics

**Credit Hours:** (3) Former: (GEOP 7353) *Cross listing* (Same as CERI 7353) **Description** (GEOP 7353)(Same as CERI 7353). Physical processes necessary for understanding plate tectonics and geological phenomena such as solidification of magmas, mechanical behavior of faults, and subsidence of sedimentary basins; topics include stress and strain in earth's crust, bending of lithosphere, heat conduction in lithosphere, and mantle convection. **PREREQUISITE** or **COREQUISITE:** Ordinary differential equations (MATH 3120 or equivalent). **PREREQUISITE(S):** ECON 7300 or permission of instructor.

### ESCI 7357 - Archaeol Of Southeast

**Credit Hours:** (0)

### ESCI 7390-7399 - Special Topics in Archaeology

**Credit Hours:** (3-6) Former: (ANTH 7380-89) **Description** Provides understanding of archaeological interpretation through detailed examination of current archaeological issues and topics. **NOTE:** No more than 6 hours may be counted toward degree requirements in Earth Sciences.

### ESCI 7400 - Adv Field Methods/Geol

**Credit Hours:** (3) Former: (GEOL 7400) **Description** (GEOL 7400). Conducted two- to five-day field studies in Geology. Topics will vary according to location and faculty interest. May be repeated for a maximum of 6 credit hours. Only three (3) credits may be applied to major. May be repeated for a maximum of 6 credit hours. Only three (3) credits may be applied to major

### ESCI 7405 - Struc Interp/Seism Data

**Credit Hours:** (3) *Cross listing* (Same as CERI 7405-CERI 8405) **Description** (Same as CERI 7405-8405). Practical application of reflection seismic method used in tectonic analysis of deformed belts and sedimentary basins, including case studies from around the world that emphasize integration of seismic reflection data with other surface and subsurface geological/ geophysical information, as well as use of restorable structural sections; basics of seismic processing are introduced in the framework of interpretation problems.

### ESCI 7430 - Adv Economic Geog

**Credit Hours:** (3) Former: (GEOG 7430-8430) **Description** (GEOG 7430-8430). Selected topics in economic geography. Subjects studied will vary. May be repeated with change in content for a total of 6 hours credit. May be repeated with change in content for a total of 6 hours credit

### ESCI 7434 - Studies In Land Use

**Credit Hours:** (3) Former: (GEOG 7434-8434) **Description** (GEOG 7434-8434). Systematic analysis of suburban and rural land use characteristics, patterns, and problems; focus on US. **PREREQUISITE(S):** ECON 3320, ECON 7300, or ECON 7320-ECON 8320, or permission of instructor.

### ESCI 7440 - Tectonic Geomorphology

**Credit Hours:** (3) Former: (GEOP 7440) **Description** (GEOP 7440). Examination of landscapes in regions of active deformation and role played by tectonics, surface processes, and climate in their origin; addresses range of spatial and temporal scales, encompassing long-term evolution of mountain belts to topography associated with individual structures and specific climate and tectonic conditions. **PREREQUISITE(S):** ECON 7100 or equivalent, or permission of instructor.

### ESCI 7471 - Cultural Geography

**Credit Hours:** (3) Former: (GEOG 7471-8471) **Description** (GEOG 7471-8471). A systematic analysis of the manner in which selected culture traits interact with other patterned phenomena to produce distinctive geographic landscapes. Individual student study on selected problems is an integral part of this course. **PREREQUISITE(S):** ECON 7710 or permission of instructor.

### ESCI 7504 - Sem Geog Info Systems

**Credit Hours:** (3) Former: (GEOG 7504-8504) *Cross listing* (Same as PLAN 7504) **Description** (GEOG 7504-8504; same as PLAN 7504). Discussion of short- and long-term GIS science research topics by University Consortium of Geographic Information Science (UCGIS), such as Internet GIS, possible effects of Internet GIS on society, public participation GIS, participatory GIS, GIS for homeland security, geo-spatial society, and geo-visualization. **PREREQUISITE(S):** ECON 7300 or equivalent or permission of instructor.

### ESCI 7505-7515 - Special Topics in Earth Sciences

**Credit Hours:** (3) **Description** Topics are varied. Repeatable. May be repeated for a maximum of 6 hours credit with a change of topic. **PREREQUISITE(S):** Permission of instructor.

### ESCI 7541 - Field Studies In Geog

**Credit Hours:** (3-6) Former: (GEOG 7541-8541) **Description** (GEOG 7541-8541). Faculty-conducted field trip emphasizing study of geographical phenomena; location will vary; topics may include physical landscapes, land-use patterns, cross-cultural analysis, micro and regional economics, or other geographical processes. Credit hours are based on length of time in field. Requires research and written report. May be repeated with a change in content for maximum of 6 hours. May be repeated with a change in content for maximum of 6 hours **PREREQUISITE(S):** ECON 7300 or permission of instructor.

### ESCI 7613 - GIS and Human Health

**Credit Hours:** (3) **Description** Fundamental concepts in using GIS to map and analyze geographical distributions of populations at risk, health outcomes, and risk factors; to explore associations between risk factors and health outcomes; and to address health problems. **PREREQUISITE(S):** ECON 7125-ECON 8125 or permission of instructor.

### ESCI 7621 - Independent Study

**Credit Hours:** (1-9) Former: (GEOG 7621) **Description** (GEOG 7621). Independent investigation of a research problem selected in consultation with the instructor. May be repeated for a maximum of 9 credit hours. Grades of S/U or IP will be given. May be repeated for a maximum of 9 credit hours

### ESCI 7623 - Spatial Health Inequalities

**Credit Hours:** (3) *Cross listing* (same as PUBH 7623 - PUBH 8623). **Description** Application of GIS and Spatial Analysis to the study of health inequalities. **PREREQUISITE(S):** ESCI 4515 - ESCI 6515 or permission of instructor.

### ESCI 7700 - Seminar in Earth Sciences

**Credit Hours:** (3) **Description** This seminar explores issues, research, and/or methods on selected topics of the multi-disciplinary Earth Sciences. May be repeated with change in content for a maximum of 6 credit hours. **PREREQUISITE(S):** ECON 7810.

### ESCI 7703 - Seminar In Geology

**Credit Hours:** (3) Former: (GEOL 7701-8701) **Description** The course offers a range of topic specific content in Geology. May be repeated for a maximum of 6 hours credit with a change of topic.

### ESCI 7704 - Seminar In Tectonics

**Credit Hours:** (3) Former: (GEOG 7704-8704) May be repeated for a maximum of 6 hours credit with a change of topic.

### ESCI 7800 - Seminar In Archaeology

**Credit Hours:** (3) **Description** May be repeated for a maximum of 6 credit hours.

### ESCI 7801 - Geog Thought & Mthdly

**Credit Hours:** (3) Former: (GEOG 7801) **Description** (GEOG 7801). Introduces student to major philosophies of geography and to methods of geographic research.

### ESCI 7850 - Principles of Geoarchaeology

**Credit Hours:** (4) **Description** Study of sediments and soils and laboratory analytical techniques applied to archaeological site formation processes; two lecture, four laboratory hours per week. There is a \$25.00 course fee. There is a \$25.00 course fee.

### ESCI 7900 - Professional Paper

**Credit Hours:** (3) Former: (GEOG 7900) **Description** (GEOG 7900). Preparation and presentation of research paper. Grades of S, U, or IP will be given.

### ESCI 7990 - Research/Earth Science

**Credit Hours:** (1-9) **Description** Graduate credit for non-thesis or non-dissertation research in Earth Science. May be repeated for a maximum of 12 credit hours. Grades of S/U or IP will be given. May be repeated for a maximum of 12 credit hours

### ESCI 7996 - Thesis

**Credit Hours:** (1-6) **Description** Student must research, write, and defend a thesis on a topic approved by major

professor and advisory committee. Grades of S, U, or IP will be given.

### ESCI 7998 - Capstone GIS Project

**Credit Hours:** (3) **Description** Preparation of a project that exhibits mastery skills of problem-solving process and advanced application of Geographic Information Systems. **PREREQUISITE OR COREQUISITE:** ESCI 6515, ESCI 6525 and an elective course approved by GIS Certificate Advisory Committee or permission of instructor. Grades of S, U, or I will be given.

### ESCI 8010-8019 - Special Topics in Geology

**Credit Hours:** (3) May be repeated for a maximum of 6 hours credit with a change of topic.

### ESCI 8120 - Seminar/Geomorphology

**Credit Hours:** (3) Former: (GEOG 7120-8120) **Description** (GEOG 7120-8120). Analysis and application of major geomorphic models; threshold, episodic, time-space, systems, and magnitude; frequency principles examined in both classroom and field; dating techniques applied to geomorphic interpretations; individual and team projects required.

### ESCI 8201 - Geographic Environ/Anly

**Credit Hours:** (3) Former: (GEOG 7201-8201) *Cross listing* (Same as PLAN 7302) **Description** (GEOG 7201-8201; same as PLAN 7302). Analytical and qualitative critique of the physical environment with emphasis on environmental quality, including air and water quality standards, soil erosion, solid waste management, and nuisance control.

### ESCI 8221 - River Conservation

**Credit Hours:** (3) Former: (GEOG 7221-8221) **Description** (GEOG 7221-8221). Field-based project studying how stream habitats vary under different hydraulic flow conditions, with lecture-based materials, interactive seminars, fieldwork, and lab work drawing on geography, conservation, geomorphology, hydrology, and ecology.

### ESCI 8230 - Exploration Seismology

**Credit Hours:** (4). Former: (ESCI 7404-8404). *Cross listing* (same as CERI 7230 - CERI 8230) **Description** Examines the

reflective seismic approach to mineral exploration, and environmental and tectonic imaging; covers seismic data processing, data visualization, and acquisition procedures, including field equipment; hands-on experience analyzing seismic reflection records. Three lecture, two laboratory hours per week. **PREREQUISITE(S):** Permission of instructor.

### ESCI 8231 - Seminar Water Resources

**Credit Hours:** (3) Former: (GEOG 7231-8231) **Description** Issues, problems, and research on selected topics of surface and groundwater, water uses, and fluvial process. May be repeated for a maximum of 6 hours credit with a change of topic.

### ESCI 8240 - Earthquake Surface Processes

**Credit Hours:** (3) Former: (CERI 7240/8240) **Description** (CERI 7240/8240) Overview of the surface and near-surface geological conditions that are associated with earthquake occurrence. Evidence for past large earthquakes as written in the geological record. Hands-on experience will be obtained through field work.

### ESCI 8254 - Archaeology & Hunter Gatherers

**Credit Hours:** (3) **Description** Introduction to hunter-gatherer studies in archaeology and ethnoarchaeology exploring evolutionary theory applied to hunter-gatherer behavior in prehistoric contexts.

### ESCI 8256 - Archaeology & Complex Society

**Credit Hours:** (3) **Description** Advanced study of complex societies from local groups to archaic states. Focus on theoretical and methodological analyses of cultural complexity in prehistory.

### ESCI 8301 - Seminar In Geography

**Credit Hours:** (3) Former: (GEOG 7301-8301) **Description** (GEOG 7301-8301). Regional analysis of selected areas of the world including: the U.S., Canada, Europe, former Soviet Union, Middle America, South America, Asia, Africa, and Oceania. May be repeated with a change in content for a maximum of 6 hours credit.

### ESCI 8312 - Spatial Statistics

**Credit Hours:** (3) Former: (GEOG 7312-8312) **Description** (GEOG 7312-8312). Reviews a range of spatial analytical techniques and their implementation in state-of-the-art spatial statistics software.

### ESCI 8320 - Archeological Spatial Analysis

**Credit Hours:** (4) **Description** Intensive hands-on collection, processing, and analysis of spatial archaeological data at a variety of scales and settings. Introduction to collection techniques, computer processing methods, and statistical evaluation of spatial data. 2 hours lecture, 2 hours lab. \$25.00 course fee. \$25.00 course fee.

### ESCI 8405 - Struc Interp/Seism Data

**Credit Hours:** (3) *Cross listing* (Same as CERI 7405-CERI 8405) **Description** (Same as CERI 7405-8405). Practical application of reflection seismic method used in tectonic analysis of deformed belts and sedimentary basins, including case studies from around the world that emphasize integration of seismic reflection data with other surface and subsurface geological/ geophysical information, as well as use of restorable structural sections; basics of seismic processing are introduced in the framework of interpretation problems.  
**PREREQUISITE(S):** EDPR 8121.

### ESCI 8430 - Adv Economic Geog

**Credit Hours:** (3) Former: (GEOG 7430-8430) **Description** (GEOG 7430-8430). Selected topics in economic geography. Subjects studied will vary. May be repeated with change in content for a total of 6 hours credit. May be repeated with change in content for a total of 6 hours credit.  
**PREREQUISITE(S):** EDPR 8121 or EDPR 8149 or permission of instructor.

### ESCI 8434 - Studies In Land Use

**Credit Hours:** (3) Former: (GEOG 7434-8434) **Description** (GEOG 7434-8434). Systematic analysis of suburban and rural land use characteristics, patterns, and problems; focus on US.

### ESCI 8471 - Cultural Geography

**Credit Hours:** (3) Former: (GEOG 7471-8471) **Description** (GEOG 7471-8471). A systematic analysis of the manner in which selected culture traits interact with other patterned phenomena to produce distinctive geographic landscapes.

Individual student study on selected problems is an integral part of this course.

### ESCI 8504 - Sem Geog Info Systems

**Credit Hours:** (3) Former: (GEOG 7504-8504) *Cross listing* (Same as PLAN 7504) **Description** (GEOG 7504-8504; same as PLAN 7504). Discussion of short- and long-term GIS science research topics by University Consortium of Geographic Information Science (UCGIS), such as Internet GIS, possible effects of Internet GIS on society, public participation GIS, participatory GIS, GIS for homeland security, geo-spatial society, and geo-visualization.

### ESCI 8541 - Field Studies In Geog

**Credit Hours:** (3-6) Former: (GEOG 7541-8541) **Description** (GEOG 7541-8541). Faculty-conducted field trip emphasizing study of geographical phenomena; location will vary; topics may include physical landscapes, land-use patterns, cross-cultural analysis, micro and regional economics, or other geographical processes. Credit hours are based on length of time in field. Requires research and written report. May be repeated with a change in content for maximum of 6 hours.

### ESCI 8613 - GIS and Human Health

**Credit Hours:** (3) **Description** Fundamental concepts in using GIS to map and analyze geographical distributions of populations at risk, health outcomes, and risk factors; to explore associations between risk factors and health outcomes; and to address health problems.

### ESCI 8623 - Spatial Health Inequalities

**Credit Hours:** (3) *Cross listing* (same as PUBH 7623 - PUBH 8623). **Description** Application of GIS and Spatial Analysis to the study of health inequalities. **PREREQUISITE(S):** ESCI 4515 - ESCI 6515 or permission of instructor.

### ESCI 8702 - Seminar In Seismology

**Credit Hours:** (1-3) Former: (GEOP 7702-8702). **Description** (GEOP 7702-8702). **PREREQUISITE(S):** EDPR 8511 and EDPR 8541 or permission of instructor.

### ESCI 8703 - Seminar In Geology

**Credit Hours:** (3) Former: (GEOL 7701-8701) May be repeated for a maximum of 6 hours credit with a change of topic.

### **ESCI 8704 - Seminar In Tectonics**

**Credit Hours:** (3) Former: (GEOP 7704-8704) May be repeated for a maximum of 6 hours credit with a change of topic.

### **ESCI 8800 - Seminar In Archaeology**

**Credit Hours:** (3) **Description** May be repeated for a maximum of 6 credit hours. May be repeated for a maximum of 6 credit hours.

### **ESCI 8850 - Principles of Geoarchaeology**

**Credit Hours:** (4) **Description** Study of sediments and soils and laboratory analytical techniques applied to archaeological site formation processes; two lecture, four laboratory hours per week. There is a \$25.00 course fee. Two lecture, four laboratory hours per week. There is a \$25.00 course fee.

### **ESCI 9000 - Dissertation**

**Credit Hours:** (1-9) **Description** Grades of S, U, or IP will be given.

## **Economics**

### **ECON 6023 - Personnel Economics**

**Credit Hours:** 3 **Description** The application of formal economic theory, statistics and econometrics to human resource management, including employee selection, employee motivation, turnover, performance evaluation and job design. **PREREQUISITE(S):** Prerequisite: ECON 2023 or ECON 7100

### **ECON 6120 - Economic Forecasting**

**Credit Hours:** (3) **Description** Current economic thinking on problems of recession and inflation as background to economic forecasting; methodologies of forecasting analyzed with examples of each. **PREREQUISITE(S):** SCMS 3711, or equivalent.

### **ECON 6315 - Applied Macroeconomics**

**Credit Hours:** (3) **Description** Theoretical foundations and practice of macroeconomic analytics for understanding policy making and implications for business decision making. Topics include national accounts, inflation, unemployment, exchange rates, business cycles, asset pricing, and monetary and fiscal policy, with emphasis on the data and statistical measure of macroeconomic outcomes.

### **ECON 6550 - Game Theory/Strategic Analysis**

**Credit Hours:** (3) **Description** Study of strategic behavior when parties have opposed, mixed, or similar interest; sequential and simultaneous move games, pure mixed strategies, various equilibrium concepts, and repeated games. **PREREQUISITE(S):** ECON 2020

### **ECON 6740 - Health Care Economics**

**Credit Hours:** 3 **Description** Unique nature of health care as economic good, health care market and its participants including patients, physicians, and hospitals, and financing and delivery of personal health care in United States and other countries.

### **ECON 6760-6769 - Special Topics in Economics**

**Credit Hours:** (1-3) **Description** Topics vary. may be repeated when topics change

### **ECON 6810 - Quant Economic Analysis**

**Credit Hours:** (3) **Description** Introduction to the application of mathematical tools in business and economics; review of matrix algebra, differential and integral calculus; optimization with and without constraints; comparative statistics.

### **ECON 6820 - Econometrics**

**Credit Hours:** (3) **Description** Introduction to statistical procedures used to estimate and test quantitative economic theories, using microcomputer software for regression analysis. **PREREQUISITE(S):** SCMS 2710 or MATH 1530 or equivalent as approved by instructor.

### **ECON 7100 - Econ for Global Executive \*\***

**Credit Hours:** (3) **Description** Essential economic theory and its application to business and economic issues. Consumer behavior, managerial economics and strategy, market structure in a global context.

### **ECON 7120 - Adv Quant Econ Analysis**

**Credit Hours:** (3) **Description** Mathematical methods of economic dynamics; difference and differential equations; dynamic stability; dynamic programming; optimal control theory; applications to saving, investment, portfolio choice, labor supply, and asset pricing.

### **ECON 7125 - Appl Stat Mthds for Bus & Econ**

**Credit Hours:** (3) **Description** Probability and statistical techniques used in economics, finance, accounting, and management science.

### **ECON 7126 - Economic Forecasting**

**Credit Hours:** (3) **Description** Statistical models for forecasting and measuring risk, growth, cyclical and seasonal patterns in business, and economic time series.

### **ECON 7130 - Industrial Organization**

**Credit Hours:** (3) **Description** How different types of markets work; nature of the firm; monopoly; oligopoly; repeated games and collusion; monopolistic competition and product differentiation; entry, accommodation and exit. May also cover topics such as research and development, advertising, consumer search, among others.  
**PREREQUISITE(S):** ECON 7310/ECON 8310 or permission of instructor.

### **ECON 7170 - Intl Trade & Investmnts**

**Credit Hours:** (3) **Description** Introduction to trade theory and international macroeconomics. Determinants of trade flows, gains from trade and the distributional effects, optimal policy intervention. Basic international macroeconomics, including balance of payments, capital flows and exchange rate determination. **PREREQUISITE(S):** ECON 7100 or permission of instructor.

### **ECON 7175 - Intl Trade Theory/Pol**

**Credit Hours:** (3) **Description** Advanced treatment of the theory of international trade; the theory of comparative advantage, the Heckscher-Ohlin model, specific factors, returns to scale and product life-cycle hypotheses; applications of tariffs and commercial policies, international factor movements, and selected topics in international economic development. **PREREQUISITE(S):** ECON 7310 ECON 8310 or permission of instructor.

### **ECON 7176 - Intl Monetary Thry/Pol**

**Credit Hours:** (3) **Description** Advanced treatment of open economy macroeconomics: determination of internal and external balance; balance of payments accounting; models of balance of payments adjustment, foreign exchange rate determination, and international capital flows; stabilization mechanisms and policies. **PREREQUISITE(S)** or **COREQUISITE(S):** ECON 7320 ECON 8320 or permission of instructor.

### **ECON 7210 - Labor Economics**

**Credit Hours:** (3) **Description** Use of theory and statistical techniques to analyze various aspects of labor markets, including labor demand and supply, human capital, the wage structure, unemployment and discrimination.

### **ECON 7300 - Econ Theory & Decisions**

**Credit Hours:** (3) **Description** Basic exposition of decision-making theories of consumers and firms under different market structures and informational settings.  
**PREREQUISITE(S):** ECON 6810 or equivalent

### **ECON 7310 - Adv Microeconomics I**

**Credit Hours:** (3) **Description** A more advanced study of consumer preferences, competitive demand, producer theory; welfare economics, general equilibrium and basic cooperative game theory. **PREREQUISITE(S):** ECON 7300 or permission of instructor.

### **ECON 7313 - Econ Risk & Uncertainty**

**Credit Hours:** (3) **Description** Expected utility theory, criticisms and alternatives; stochastic dominance; risk aversion and prudence; log-supermodularity; multiple risks; comparative statics of choice under uncertainty; applications to insurance, saving, portfolio choice, labor supply, investment, and asset pricing.



### ECON 7320 - Adv Macroeconomics I

**Credit Hours:** (3) **Description** Microeconomic foundations of macroeconomic models; general equilibriums, overlapping generations, neoclassical growth and investment theory. Introduction to optimal control and dynamic programming.

**PREREQUISITE(S):** ECON 7300

### ECON 7322 - Monetary Theory & Pol

**Credit Hours:** (3) **Description** Role of money in the macroeconomy: includes theory of financial structure, money creation and monetary control, theory of money demand; general equilibrium financial models: static analysis, short-run dynamics, monetary growth; rules versus discretion debate: optimal monetary policy, historical conduct of monetary policy. **PREREQUISITE(S)** or **COREQUISITE(S):** ECON 7300 or ECON 7320 ECON 8320, or permission of instructor.

### ECON 7331 - Urban Economics

**Credit Hours:** 3 **Description** This course will survey basic material in urban economics, covering models of urban residential structure. Additionally the course will focus on empirical literature on four other topics in urban economics: urban housing markets, racial & ethnic discrimination in housing, the 1960s War on Poverty, and urban crime and crime policies. **PREREQUISITE(S):** ECON 7300 and ECON7310/8310 and ECON 7810/8810 Standard Letter

### ECON 7710 - Health Care Economics \*\*

**Credit Hours:** (3) **Description** Applies basic economic concepts to analyze health care market and evaluate health policies; including distinctive economic characteristics of health, health care industry, and health care professionals; American system of health care; current health care policy issues such as health care reform, managed care, and manpower planning. **PREREQUISITE(S)** or **COREQUISITE(S):** ECON 7100 or equivalent, or permission of instructor.

### ECON 7711 - Appl Health Care Econ

**Credit Hours:** (3) **Description** Uses economic theories and related methodologies to illuminate an array of health and health care issues. Evaluates theoretical and empirical problems in health and medical care. Covers the structure, conduct, and performance of markets for physicians, hospitals, pharmaceuticals, and long-term care. Covers health and health

care policies of the US (local, state, federal) and select other countries. **PREREQUISITE(S):** ECON 7710 or permission of instructor.

### ECON 7712 - Pharmaceutical Econ

**Credit Hours:** (3) **Description** Comprehensive treatment of classic and emerging literature on the methodology and applications of industrial organization and resource-based theories in pharmaceutical and related health and medical care technology industries (e.g., medical devices, biotechnologies) in the global context. **PREREQUISITE(S):** ECON 7300 or equivalent or permission of instructor.

### ECON 7715 - Global Healthcare Economics

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**Credit Hours:** (3) **Description** Applies basic economic concepts toward understanding market economics, regulatory apparatus, and other strategic complexities in the biomedical industry and related markets; analysis of global healthcare issues and systems. **PREREQUISITE(S):** ECON 7100 or permission of instructor.

### ECON 7720 - Econ Public Sector

**Credit Hours:** (3) **Description** Study of government's role in the economy, both in theory and in practice. Production and financing of public goods, taxation, advantages and disadvantages of federalism, externalities, government programs and their effects. Emphasis on current problems and policy decisions. **PREREQUISITE(S):** ECON 7300 or permission of instructor.

### ECON 7810 - Econometrics I

**Credit Hours:** (3) **Description** Classical multivariate regression analysis and statistical inference under ideal and non-ideal conditions; theoretical foundations with emphasis on empirical implementation; estimation of models with categorical data, non-linearity, simple dynamics, or panel data. **PREREQUISITE(S):** ECON 7125/ECON 8125 or permission of instructor.

### ECON 7811 - Applied Microeconometrics

**Credit Hours:** (3) **Description** Estimation and statistical inference with a focus on microeconomic techniques; panel data; instrumental variables and simultaneous equations models; estimation of treatment effects; binomial and multinomial choice models; censored data and sample

selectivity; regression discontinuity design; quantile regression. **PREREQUISITE(S):** ECON 7810/ECON 8810

### **ECON 7901 - Teaching Practicum**

**Credit Hours:** (1-6) **Description** Practical demonstrations of and experience in the art of teaching economics topics. Required of all PhD students and recommended for all graduate assistants. May be repeated for a maximum of 6 credit hours. Grades of S, U, or IP will be given. May be repeated for a maximum of 6 credit hours

### **ECON 7910 - Prob In Economics**

**Credit Hours:** (1-6) **Description** Directed independent reading and research in an area selected by the student with the approval of the supervising faculty member and Faculty Director. Proposed plan of study must be approved prior to enrollment. Grades of A-F, or IP will be given.

### **ECON 7940-7940 - Special Topics in Economics**

**Credit Hours:** (1-3)

### **ECON 7996 - Thesis**

**Credit Hours:** (3-6) **Description** Independent research for the master's degree. Grades of S, U, or IP will be given.

### **ECON 8120 - Adv Quant Econ Analysis**

**Credit Hours:** (3) **Description** Mathematical methods of economic dynamics; difference and differential equations; dynamic stability; dynamic programming; optimal control theory; applications to saving, investment, portfolio choice, labor supply, and asset pricing.

### **ECON 8125 - Appl Stat Mthds for Bus & Econ**

**Credit Hours:** (3) **Description** Probability and statistical techniques used in economics, finance, accounting, and management science.

### **ECON 8126 - Economic Forecasting**

**Credit Hours:** (3) **Description** Statistical models for forecasting and measuring risk, growth, cyclical and seasonal patterns in business, and economic time series.

**PREREQUISITE(S):** ECON 7100 or permission of instructor.

### **ECON 8130 - Industrial Organization**

**Credit Hours:** (3) **Description** How different types of markets work; nature of the firm; monopoly; oligopoly; repeated games and collusion; monopolistic competition and product differentiation; entry, accommodation and exit. May also cover topics such as research and development, advertising, consumer search, among others.

**PREREQUISITE(S):** ECON 7310 ECON 8310 or permission of instructor.

### **ECON 8175 - Intl Trade Theory/Pol**

**Credit Hours:** (3) **Description** Advanced treatment of the theory of international trade; the theory of comparative advantage, the Heckscher-Ohlin model, specific factors, returns to scale and product life-cycle hypotheses; applications of tariffs and commercial policies, international factor movements, and selected topics in international economic development.

### **ECON 8176 - Intl Monetary Thry/Pol**

**Credit Hours:** (3) **Description** Advanced treatment of open economy macroeconomics: determination of internal and external balance; balance of payments accounting; models of balance of payments adjustment, foreign exchange rate determination, and international capital flows; stabilization mechanisms and policies. **PREREQUISITE(S):** ECON 7320 ECON 8320 or permission of instructor.

### **ECON 8210 - Labor Economics**

**Credit Hours:** (3) **Description** Use of theory and statistical techniques to analyze various aspects of labor markets, including labor demand and supply, human capital, the wage structure, unemployment and discrimination.

### **ECON 8310 - Adv Microeconomics I**

**Credit Hours:** (3) **Description** A more advanced study of consumer preferences, competitive demand, producer theory; welfare economics, general equilibrium and basic cooperative game theory. **PREREQUISITE(S):** ECON 7300

### **ECON 8311 - Adv Microecon II**

**Credit Hours:** (3) **Description** Advanced microeconomic applications of game theory; static and dynamic games of complete information; Bayesian games; repeated games; introduction to mechanism design. Application include: oligopoly, basic auctions, adverse selection, moral hazard, among others. **PREREQUISITE(S):** ECON 7300 or permission of instructor.

### ECON 8313 - Econ Risk & Uncertainty

**Credit Hours:** (3) **Description** Expected utility theory, criticisms and alternatives; stochastic dominance; risk aversion and prudence; log-supermodularity; multiple risks; comparative statics of choice under uncertainty; applications to insurance, saving, portfolio choice, labor supply, investment, and asset pricing.

### ECON 8320 - Adv Macroeconomics I

**Credit Hours:** (3) **Description** Microeconomic foundations of macroeconomic models; general equilibriums, overlapping generations, neoclassical growth and investment theory. Introduction to optimal control and dynamic programming. **PREREQUISITE(S):** ECON 7300

### ECON 8321 - Adv Macroecon II

**Credit Hours:** (3) **Description** Introduction to practical stochastic dynamic programming. Topics covered include: consumption and saving; models of price determination; monetary policy, money and liquidity; bank runs; asset pricing; equilibrium search and matching models.

### ECON 8322 - Monetary Theory & Pol

**Credit Hours:** (3) **Description** Role of money in the macroeconomy: includes theory of financial structure, money creation and monetary control, theory of money demand; general equilibrium financial models: static analysis, short-run dynamics, monetary growth; rules versus discretion debate: optimal monetary policy, historical conduct of monetary policy. **PREREQUISITE(S):** ECON 7300 or ECON 7320 ECON 8320 or permission of instructor.

### ECON 8331 - Urban Economics

**Credit Hours:** 3 **Description** This course will survey basic material in urban economics, covering models of urban residential structure. Additionally the course will focus on empirical literature on four other topics in urban economics: urban housing markets, racial & ethnic

discrimination in housing, the 1960s War on Poverty, and urban crime and crime policies. **PREREQUISITE(S):** ECON 7300 and ECON7310/8310 and ECON 7810/8810 Standard Letter

### ECON 8710 - Health Care Economics

**Credit Hours:** (3) **Description** Applies basic economic concepts to analyze health care market and evaluate health policies; including distinctive economic characteristics of health, health care industry, and health care professionals; American system of health care; current health care policy issues such as health care reform, managed care, and manpower planning. **PREREQUISITE(S):** ECON 7100 or equivalent, or permission of instructor.

### ECON 8711 - Appl Health Care Econ

**Credit Hours:** (3) **Description** Uses economic theories and related methodologies to illuminate an array of health and health care issues. Evaluates theoretical and empirical problems in health and medical care. Covers the structure, conduct, and performance of markets for physicians, hospitals, pharmaceuticals, and long-term care. Covers health and health care policies of the US (local, state, federal) and select other countries. **PREREQUISITE(S):** ECON 7710 or permission of instructor.

### ECON 8712 - Pharmaceutical Econ

**Credit Hours:** (3) **Description** Comprehensive treatment of classic and emerging literature on the methodology and applications of industrial organization and resource-based theories in pharmaceutical and related health and medical care technology industries (e.g., medical devices, biotechnologies) in the global context. **PREREQUISITE(S):** ECON 7300 or equivalent or permission of instructor.

### ECON 8720 - Econ Public Sector

**Credit Hours:** (3) **Description** Study of government's role in the economy, both in theory and in practice. Production and financing of public goods, taxation, advantages and disadvantages of federalism, externalities, government programs and their effects. Emphasis on current problems and policy decisions. **PREREQUISITE(S):** ECON 7300 or permission of instructor.

### ECON 8810 - Econometrics I

**Credit Hours:** (3) **Description** Classical multivariate regression analysis and statistical inference under ideal and non-ideal conditions; theoretical foundations with emphasis on empirical implementation; estimation of models with categorical data, non-linearity, simple dynamics, or panel data. **PREREQUISITE(S):** ECON 7125 ECON 8125 or permission of instructor.

### **ECON 8811 - Applied Microeconometrics**

**Credit Hours:** (3) **Description** Estimation and statistical inference with a focus on microeconomic techniques; panel data; instrumental variables and simultaneous equations models; estimation of treatment effects; binomial and multinomial choice models; censored data and sample selectivity; regression discontinuity design; quantile regression. **PREREQUISITE(S):** ECON 7810/ECON 8810

### **ECON 8812 - Time Series Econometrics**

**Credit Hours:** (3) **Description** Analysis and modeling of economic and financial time series with applications. ARIMA and ARCH processes; stationarity, causality and cointegration; vector autoregression, structural model and equilibrium correction models. **PREREQUISITE(S):** ECON 7810/ECON 8810

### **ECON 8901 - Teaching Practicum**

**Credit Hours:** (1-6) **Description** Practical demonstrations of and experience in the art of teaching economics topics. Required of all PhD students and recommended for all graduate assistants. May be repeated for a maximum of 6 credit hours. Grades of S, U, or IP will be given. May be repeated for a maximum of 6 credit hours

### **ECON 8910 - Prob In Economics**

**Credit Hours:** (1-6) **Description** Directed independent reading and research in an area selected by the student with the approval of the supervising faculty member and Faculty Director. Proposed plan of study must be approved prior to enrollment. Grades of A-F, or IP will be given.

### **ECON 8940-8949 - Special Topics in Economics**

**Credit Hours:** (1-3)

### **Education Administration**

### **EDAD 7050 - Educational Law**

**Credit Hours:** (3)

### **Education Leadership Policy**

### **ELPA 7560 - Small Group Leadership \*\***

**Credit Hours:** (3) Former: (HMEC, CSED 6702)

**Description** This course examines how group behavior affects organizational effectiveness, decision making, conflict resolution, and strategies for efficient group and task management. Restricted to Psychology graduate student or permission of instructor. **PREREQUISITE(S):** Permission of instructor.

### **Educational Psychology and Research**

#### **EDPR 7000 - Research Project**

**Credit Hours:** (1-6) **Description** Research project that is designed and completed under direction of student's advisor; capstone experience for Master's degree program. Grades of S, U, or IP will be given. May be repeated for a maximum of 6 credit hours

#### **EDPR 7001-7006 - Special Topics in Educational Psychology and Research**

**Credit Hours:** (1-3) Former: (EDFD 7006-7015/EDFD 8006-8015) May be repeated with a change in content.

#### **EDPR 7008 - Directed Readings**

**Credit Hours:** (1-3) Former: (EDFD 7008) **Description** Individually directed reading; written report required. May be repeated for a maximum of 9 credits

#### **EDPR 7011 - Feminist Research Methods in Education**

**Credit Hours:** 3 **Description** This advanced level graduate seminar will examine key feminist research methodology texts ranging from first wave feminism to current-day to study both the limits and possibilities of those texts.

#### **EDPR 7081 - Supervised Research**

**Credit Hours:** (1-6) Former: (EDFD 7081) **Description** Collaborative research with faculty within the major to include planning, design, management, analysis, and reporting of research. May be repeated for a maximum of 12 hours  
**PREREQUISITE(S):** Minimum of 12 hours in major and permission of instructor. Grade of A-F or IP will be given.

### **EDPR 7109 - Infant Development and Education**

**Credit Hours:** 3 Former: (EDPS 7109-8109) **Description** Infancy and toddlerhood from developmental research issues perspective; empirical studies and contemporary issues relating to factors influencing infant development.

### **EDPR 7111 - Child Development & Education \*\***

**Credit Hours:** 3 Former: (EDPS 7111-8111) **Description** Major theories of child psychology and their implications for educational practices with the preschool and elementary school child.

### **EDPR 7112 - Adolescent Development & Educ \*\***

**Credit Hours:** 3 Former: (EDPS 7112-8112) **Description** Advanced study of theories and research on the physical, psychological, social, cognitive, and cultural aspects of adolescent development; implications for education, treatment, secondary school personnel, and others who live and work with adolescents.

### **EDPR 7113 - Adult Development & Educ \*\***

**Credit Hours:** (3) Former: (EDPS 7113-8113) **Description** Cognitive, emotional, and psychosocial theories and research on middle age and adult development.

### **EDPR 7114 - Psychology Of Aging**

**Credit Hours:** (3) Former: (EDPS 7114-8114) **Description** Cognitive, emotional, and psychosocial developmental theories of aging and implications for life-span education.  
**PREREQUISITE(S):** Permission of instructor.

### **EDPR 7116 - Chldhd Dvlpmnt in Digital Age**

**Credit Hours:** (3) **Description** Current issues, research and theories about the development of children (ages 0-12) in

relation to video games, Internet use, digital literacy, digital citizenship and learning in school. The course uses a hands-on/minds-on approach through collaborative work.

### **EDPR 7117 - Life-Span Human Dev \*\***

**Credit Hours:** (3) **Description** Theories and research on the physical, psychological/emotional, social, cognitive, and cultural aspects of human development across the life span.

### **EDPR 7121 - Learning & Cognition \*\***

**Credit Hours:** (3) Former: (EDPS 7121-8121) **Description** Major theories of learning and cognition, intelligence theories, and their application to learning environments.

### **EDPR 7126 - Intro to Piaget's Work**

**Credit Hours:** (3) **Description** Seminar to introduce Jean Piaget's epistemological and psychological studies.

### **EDPR 7131 - Cultural Diverse Stdnts \*\***

**Credit Hours:** (3) Former: (EDPS 7131-8131) **Description** Cultural differences among American student populations; emphasis on family structure, socialization of children, and cultural influences on student behavior.

### **EDPR 7149 - Sem Cognitive Processes**

**Credit Hours:** (3) Former: (EDPS 7149-8149) **Description** Classic and current learning theory research, with emphasis on recent work in cognition, constructivism, and neuropsychology applied to education.

### **EDPR 7150 - Motivation**

**Credit Hours:** (3) Former: (EDPS 7150-8150) **Description** Theoretical and research viewpoints on motivation to learn; applications to educational settings.

### **EDPR 7161 - Moral Dvlpmnt & Educ**

**Credit Hours:** (3) Former: (EDPS 7161-8161) **Description** Current theory and research on moral and ethical reasoning and development across the life span and educational implications.

### **EDPR 7165 - Social Devlpmnt/Child**

**Credit Hours:** (3) **Description** Current theory and research on children's social development, with an emphasis on enculturation and socialization with parents, teachers, siblings, and peers in childhood.

### EDPR 7400 - Youth Development/Digital Era

**Credit Hours:** (3) **Description** This course is designed to present an advanced study of theories and research related to how individuals use communication technologies and how the usage is related to young people's psychological, social, and emotional development. Implications are for those who are concerned with optimal youth functioning and development in the digital era.

### EDPR 7511 - Intro Ed and Psych Measurement \*\*

**Credit Hours:** 3 Former: (EDRS 7511) **Description** Test construction; item and test statistics; interpretations and applications of standardized test results; reliability and validity estimation methods; and classical and modern measurement theories. **PREREQUISITE(S):** EDPR 7541-EDPR 8541 or permission of the instructor.

### EDPR 7512 - Psychomet Thry/Ed Appl

**Credit Hours:** (3) Former: (EDRS 7512-8512) **Description** Psychometric principles and applications to tests, rating scales, questionnaires, and other standardized instruments used in educational research; problems associated with evaluation of items and instruments in terms of reliability and validity. **PREREQUISITE(S):** EDPR 7511/EDPR 8511 and EDPR 7541/EDPR 8541 or permission of instructor.

### EDPR 7521 - Introduction to Research Design and Methodology \*\*

**Credit Hours:** (3) Former: (EDRS 7521) **Description** Introduction to major concepts and processes underlying educational research; focus on knowledge necessary for critically appraising published research and preparing students as research consumers.

### EDPR 7524 - Research Methods for School Accountability

**Credit Hours:** (3) Former: 7524 **Description** The course covers the research process to comprehend methods to use

variables, data, test scores and statistics to make inferences for school accountability, teacher professional development and school improvement. Course does not count towards EDPR MS degree. **PREREQUISITE(S):** Admission to MS program in School Administration.

### EDPR 7531 - Intro Modern Stat Packages

**Credit Hours:** 3 Former: (EDRS 7531-8531) **Description** Computer applications to research processes in education and the behavioral sciences; capabilities and limitations of computers in analysis of educational data; experience in the utilization of various (statistical) library programs. **PREREQUISITE(S):** EDPR 7541-EDPR 8541 or permission of the instructor. Grades of A-F, or IP will be given.

### EDPR 7541 - Stat Meth App Ed I \*\*

**Credit Hours:** (3) Former: (EDRS 7541-8541) **Description** Utilization and interpretation of statistical methods applied to education; topics include frequency distributions, central tendency, variability correlation, linear regression, introduction to probability, normal distribution, interval estimation, hypothesis testing via t-test and chi-square and computer utilization in statistical analysis. **PREREQUISITE(S):** EDPR 7521 or permission of instructor.

### EDPR 7542 - Statistical Methods Applied to Education II

**Credit Hours:** (3) Former: 7542 **Description** Includes one-way and two-way analysis of variance, a priori and post hoc tests of significance and an introduction to multiple linear regression and analysis of covariance; emphasis on student acquisition of practical intermediate univariate analytic and interpretative skills. **PREREQUISITE(S):** EDPR 7541/EDPR 8541 (with a course grade of B or higher) or permission of instructor. Grades of S, U, or IP will be given.

### EDPR 7544 - SEM in EDU/Behav Research

**Credit Hours:** (3) **Description** Includes path models; path analysis, confirmatory factor analysis, and latent-variable structural equation modeling (SEM); applications of path analytic and SEM techniques in educational research. **PREREQUISITE(S):** EDPR 7542/EDPR 8542 or permission of instructor

### EDPR 7547 - Sampling/Survey Methods \*\*

**Credit Hours:** (3) **Description** Examines sampling procedures, design/administration of sample surveys; strategies (simple-random, probability, non-probability, cluster, single and multistage), effect of strategy on sampling error, confidentiality/anonymity issues, questionnaire design, interview procedures, preparation of survey data for statistical analysis. **PREREQUISITE(S):** EDPR 7521 and EDPR 7542/EDPR 8542 or permission of instructor.

### EDPR 7549 - Multivariate Methods

**Credit Hours:** 3 **Description** Systematic investigation of current multivariate methods in the field of educational statistics. **PREREQUISITE(S):** EDPR 7542/EDPR 8542 or permission of instructor.

### EDPR 7551 - Program Evaluation in Social Sciences \*\*

**Credit Hours:** 3 Former: (EDRS 7551-8551) **Description** An overview of program evaluation in the social sciences, with an emphasis to real world applications, using quantitative, qualitative, and mixed methods methodologies. Topics include developing a program evaluation, data collection and analysis, formative and summative evaluations, types of program evaluations, different program evaluation models, the difference among outputs, outcomes, and impacts. **PREREQUISITE(S):** EDPR 7541-EDPR 8541 and one of (EDPR 7521-EDPR 8521, EDPR 7561-EDPR 8561).

### EDPR 7554 - Nonparamtrc Stats Appl Educatn

**Credit Hours:** (3) **Description** This course will address the statistical techniques appropriate when parametric assumptions about the nature of the data are not met. **PREREQUISITE(S):** EDPR 7542/EDPR 8542

### EDPR 7561 - Qualitative Mthds Educ \*\*

**Credit Hours:** (3) **Description** This introductory course provides and overview of qualitative research processes, beginning with epistemology, theoretical perspectives, methodologies, methods, analysis, and representation, as well as current qualitative research trends in education.

### EDPR 7562 - Designing Qualitative Research \*\*

**Credit Hours:** (3) **Description** In this course, graduate students who are completing a thesis, residency project, or

dissertation will design a qualitative research project with extensive peer and instructor feedback. **PREREQUISITE(S):** Students must have completed EDPR 7561/EDPR 8561 with a B or above within the past two years and gain permission of the instructor.

### EDPR 7563 - Theoretical Frameworks in Qual \*\*

**Credit Hours:** (3) **Description** Students in this seminar will explore and immerse themselves in various macro-level social theories used in qualitative research. **PREREQUISITE(S):** Students must have completed EDPR 7561/EDPR 8561 with a B or above within the past two years and gain permission of the instructor.

### EDPR 7565 - Qual Methods and Analysis \*\*

**Credit Hours:** (3) **Description** This advanced level course provides extensive qualitative fieldwork experience. Student will also become familiar with various forms of qualitative data analysis. **PREREQUISITE(S):** Students must have completed EDPR 7561/EDPR 8561 with a B or above within the past two years and gain permission of the instructor.

### EDPR 7566 - Writing Qualitative Research

**Credit Hours:** (3) **Description** This intensive, advanced writing course provides support for graduate students who are writing qualitative research manuscripts, theses, and dissertations. Students will receive frequent feedback from the instructor and peers in a structured writing retreat setting. **PREREQUISITE(S):** Students must have completed EDPR 7561/EDPR 8561 with a B or above within the past two years and gain permission of the instructor.

### EDPR 7572 - Institutional Research

**Credit Hours:** (3) Former: (EDRS 7572-8572) **Description** Techniques of institutional analysis in designing self-studies, evaluating the teaching and learning environment and institutional planning. **PREREQUISITE(S):** EDPR 7521 and EDPR 7542/EDPR 8542 or permission of instructor.

### EDPR 7581 - Behavior Analysis/Single Case Design

**Credit Hours:** (3) Former: 7581 **Description** Reviews essential theory, logic, concepts, principles, methods, and ethics of single-subject designs as they relate to behavior analysis. Course does not count towards EDPR MS degree

requirements. **PREREQUISITE(S):** SPED 7514/SPED 8514. Permission of instructor.

### **EDPR 8001-8006 - Special Topics in Educational Psychology and Research**

**Credit Hours:** (1-3) Former: (EDFD 7006-7015/ EDFD 8006-8015) **Description** Current topics in educational psychology and research. May be repeated with a change in content.

### **EDPR 8008 - Directed Readings**

**Credit Hours:** (1-3) Former: (EDFD 7008) *Cross listing 6*  
**Description** Individually directed reading; written report required. May be repeated for a maximum of 9 credits Grades of A-F, or IP will be given.

### **EDPR 8011 - Feminist Research Methods in Education**

**Credit Hours:** 3 **Description** This advanced level graduate seminar will examine key feminist research methodology texts ranging from first wave feminism to current-day to study both the limits and possibilities of those texts.

### **EDPR 8081 - Supervised Research**

**Credit Hours:** (1-6) Former: (EDFD 7081) **Description** Collaborative research with faculty within the major to include planning, design, management, analysis, and reporting of research. May be repeated for a maximum of 12 hours  
**PREREQUISITE(S):** Minimum of 12 hours in major and permission of instructor. Grades of A-F, or IP will be given.

### **EDPR 8109 - Infant Development and Education**

**Credit Hours:** 3 Former: (EDPS 7109-8109) **Description** Infancy and toddlerhood from developmental research issues perspective; empirical studies and contemporary issues relating to factors influencing infant development.

### **EDPR 8111 - Child Development & Education**

**Credit Hours:** 3 Former: (EDPS 7111-8111) **Description** Major theories of child psychology and their implications for educational practices with the preschool and elementary school child.

### **EDPR 8112 - Adolescent Development & Educ**

**Credit Hours:** 3 Former: (EDPS 7112-8112) **Description** Advanced study of theories and research on the physical, psychological, social, cognitive, and cultural aspects of adolescent development; implications for education, treatment, secondary school personnel, and others who live and work with adolescents.

### **EDPR 8113 - Adult Development & Educ**

**Credit Hours:** (3) Former: (EDPS 7113-8113) **Description** Cognitive, emotional, and psychosocial theories and research on middle age and adult development.

### **EDPR 8114 - Psychology Of Aging**

**Credit Hours:** (3) Former: (EDPS 7114-8114) **Description** Cognitive, emotional, and psychosocial developmental theories of aging and implications for life-span education.

### **EDPR 8116 - Chldhd Dvlpmnt in Digital Age**

**Credit Hours:** (3) **Description** Current issues, research and theories about the development of children (ages 0-12) in relation to video games, Internet use, digital literacy, digital citizenship and learning in school. The course uses a hands-on/minds-on approach through collaborative work.

### **EDPR 8117 - Life-Span Human Develop**

**Credit Hours:** (3) **Description** Theories and research on the physical, psychological/emotional, social, cognitive, and cultural aspects of human development across the life span.

### **EDPR 8121 - Learning & Cognition**

**Credit Hours:** (3) Former: (EDPS 7121-8121) **Description** Major theories of learning and cognition, intelligence theories, and their application to learning environments.

### **EDPR 8126 - Intro to Piaget's Work**

**Credit Hours:** (3) **Description** Seminar to introduce Jean Piaget's epistemological and psychological studies. May be repeated with a change in content.

### **EDPR 8131 - Cultural Diverse Stdnts**



**Credit Hours:** (3) Former: (EDPS 7131-8131) **Description** Cultural differences among American student populations; emphasis on family structure, socialization of children, and cultural influences on student behavior.

### **EDPR 8149 - Sem Cognitive Processes**

**Credit Hours:** (3) Former: (EDPS 7149-8149) **Description** Classic and current learning theory research, with emphasis on recent work in cognition, constructivism, and neuropsychology applied to education.

### **EDPR 8150 - Motivation**

**Credit Hours:** (3) Former: (EDPS 7150-8150) **Description** Theoretical and research viewpoints on motivation to learn; applications to educational settings.

### **EDPR 8161 - Moral Dvlpmnt & Educ**

**Credit Hours:** (3) Former: (EDPS 7161-8161) **Description** Current theory and research on moral and ethical reasoning and development across the life span and educational implications.

### **EDPR 8165 - Social Devlpmnt/Child**

**Credit Hours:** (3) **Description** Current theory and research on children's social development, with an emphasis on enculturation and socialization with parents, teachers, siblings, and peers in childhood.

### **EDPR 8171 - Pro Sem in Edu Psychology**

**Credit Hours:** (3) Former: (EDPS 8171) **Description** This course is designed to provide Educational Psychology doctoral students with an introduction to both the field of Educational Psychology and the program in Educational Psychology and Research.

### **EDPR 8400 - Youth Development/Digital Era**

**Credit Hours:** (3) **Description** This course is designed to present an advanced study of theories and research related to how individuals use communication technologies and how the usage is related to young people's psychological, social, and emotional development. Implications are for those who are concerned with optimal youth functioning and development in the digital era.

### **EDPR 8511 - Intro Ed and Psych Measurement \*\***

**Credit Hours:** 3 Former: (EDRS 7511) **Description** Test construction; item and test statistics; interpretations and applications of standardized test results; reliability and validity estimation methods; and classical and modern measurement theories. **PREREQUISITE(S):** EDPR 7541-EDPR 8541 or permission of instructor.

### **EDPR 8512 - Psychomet Thry/Ed Appl**

**Credit Hours:** (3) Former: (EDRS 7512-8512) **Description** Psychometric principles and applications to tests, rating scales, questionnaires, and other standardized instruments used in educational research; problems associated with evaluation of items and instruments in terms of reliability and validity. **PREREQUISITE(S):** EDPR 7511/EDPR 8511 and EDPR 7541/EDPR 8541 or permission of instructor.

### **EDPR 8519 - Sem In Educ Measurement**

**Credit Hours:** (3) Former: (EDRS 8519) **Description** Systematic investigation of current multivariate methods in the field of educational statistics.

### **EDPR 8521 - Intro Res Design & Methodology**

**Credit Hours:** (3) *Cross listing* (EDPR 7521). **Description** Introduction to major concepts and processes underlying educational research; focus on knowledge necessary for critically appraising published research and preparing students as research consumers.

### **EDPR 8531 - Intro Modern Stat Packages**

**Credit Hours:** 3 Former: (EDRS 7531-8531) **Description** Computer applications to research processes in education and the behavioral sciences; capabilities and limitations of computers in analysis of educational data; experience in the utilization of various (statistical) library programs. **PREREQUISITE(S):** EDPR 7541-EDPR 8541 or permission of the instructor.

### **EDPR 8541 - Stat Meth App Ed I \*\***

**Credit Hours:** (3) Former: (EDRS 7541-8541)

**Description** Utilization and interpretation of statistical methods applied to education; topics include frequency

distributions, central tendency, variability correlation, linear regression, introduction to probability, normal distribution, interval estimation, hypothesis testing via t-test and chi-square and computer utilization in statistical analysis.

**PREREQUISITE(S):** EDPR 7521 or permission of instructor.

### **EDPR 8542 - Statistical Methods Applied to Education II**

**Credit Hours:** (3) Former: 8542 **Description** Includes one-way and two-way analysis of variance, a priori and post hoc tests of significance and an introduction to multiple linear regression and analysis of covariance; emphasis on student acquisition of practical intermediate univariate analytic and interpretative skills. **PREREQUISITE(S):** EDPR 7541/EDPR 8541 (with a course grade of B or higher) or permission of instructor.

### **EDPR 8544 - SEM in EDU/Behav Research**

**Credit Hours:** (3) **Description** Includes path models; path analysis, confirmatory factor analysis, and latent-variable structural equation modeling (SEM); applications of path analytic and SEM techniques in educational research. **PREREQUISITE(S):** EDPR 7542/EDPR 8542 or permission of instructor.

### **EDPR 8547 - Survey Research: Sampling Design and Analysis \*\***

**Credit Hours:** (3) **Description** Examines sampling procedures, design/administration of sample surveys; strategies (simple-random, probability, non-probability, cluster, single and multistage), effect of strategy on sampling error, confidentiality/anonymity issues, questionnaire design, interview procedures, question format, issues in preparation and analysis of survey data. **PREREQUISITE(S):** EDPR 7521 and EDPR 7542/EDPR 8542 or permission of instructor.

### **EDPR 8549 - Multivariate Methods**

**Credit Hours:** (3) Former: 8549 **Description** Systematic investigation of current multivariate methods in the field of educational statistics. **PREREQUISITE(S):** EDPR 7542/EDPR 8542 or permission of instructor.

### **EDPR 8551 - Program Evaluation in Social Sciences \*\***

**Credit Hours:** 3 Former: (EDRS 7551-8551) **Description** An overview of program evaluation in the social sciences, with an emphasis to real world applications, using quantitative, qualitative, and mixed methods methodologies. Topics include developing a program evaluation, data collection and analysis, formative and summative evaluations, types of program evaluations, different program evaluation models, the difference among outputs, outcomes, and impacts. **PREREQUISITE(S):** EDPR 7541-EDPR 8541 and one of (EDPR 7521-EDPR 8521, EDPR 7561-EDPR 8561).

### **EDPR 8552 - HLM in Education/SocSci Rsch**

**Credit Hours:** (3) **Description** An introduction to the use of multilevel regression models that take into account the dependencies between observations that generally violate the independence assumption for regression, such as students nested in classrooms or schools. Topics include two and three level cross-sectional models, modeling of repeated measures, and logistic models for dichotomous dependent variables. Students learn the basic tenets of multilevel regression and apply these methods to real data from studies in education, psychology, and social sciences **PREREQUISITE(S):** EDPR 7542 - EDPR 8542 or permission of instructor.

### **EDPR 8554 - Nonparamtrc Stats Appl Educatn \*\***

**Credit Hours:** (3) **Description** This course will address the statistical techniques appropriate when parametric assumptions about the nature of the data are not met. **PREREQUISITE(S):** EDPR 7542/EDPR 8542

### **EDPR 8561 - Qualitative Mthds Educ \*\***

**Credit Hours:** (3) **Description** This introductory course provides an overview of qualitative research processes, beginning with epistemology, theoretical perspectives, methodologies, methods, analysis, and representation, as well as current qualitative research trends in education.

### **EDPR 8562 - Designing Qualitative Research \*\***

**Credit Hours:** (3) **Description** In this course, graduate students who are completing a thesis, residency project, or dissertation will design a qualitative research project with extensive peer and instructor feedback. **PREREQUISITE(S):** Students must have completed EDPR 7561/EDPR 8561 with

a B or above within the past two years and gain permission of the instructor.

### **EDPR 8563 - Theoretical Frameworks in Qual \*\***

**Credit Hours:** (3) **Description** Students in this seminar will explore and immerse themselves in various macro-level social theories used in qualitative research. **PREREQUISITE(S):** Students must have completed EDPR 7561/EDPR 8561 with a B or above within the past two years and gain permission of the instructor.

### **EDPR 8565 - Qual Methods and Analysis \*\***

**Credit Hours:** (3) **Description** This advanced level course provides extensive qualitative fieldwork experience. Student will also become familiar with various forms of qualitative data analysis. **PREREQUISITE(S):** Students must have completed EDPR 7561/EDPR 8561 with a B or above within the past two years and gain permission of the instructor.

### **EDPR 8566 - Writing Qualitative Research**

**Credit Hours:** (3) **Description** This intensive, advanced writing course provides support for graduate students who are writing qualitative research manuscripts, theses, and dissertations. Students will receive frequent feedback from the instructor and peers in a structured writing retreat setting. **PREREQUISITE(S):** Students must have completed EDPR 7561/EDPR 8561 with a B or above within the past two years and gain permission of the instructor.

### **EDPR 8572 - Institutional Research**

**Credit Hours:** (3) Former: (EDRS 7572-8572) **Description** Techniques of institutional analysis in designing self-studies, evaluating the teaching and learning environment and institutional planning. **PREREQUISITE(S):** EDPR 7521 and EDPR 7542/EDPR 8542 or permission of instructor.

### **EDPR 8581 - Behavior Analysis/Single Case Design**

**Credit Hours:** (3) Former: 8581 **Description** Reviews essential theory, logic, concepts, principles, methods, and ethics of single-subject designs as they relate to behavior analysis. Permission of instructor. Course does not count towards EDPR PhD degree requirements.

**PREREQUISITE(S):** SPED 7514 - Intro/App'l Behav Anlys  
**PREREQUISITE(S):** SPED 7514/SPED 8514.

### **EDPR 9000 - Dissertation**

**Credit Hours:** (1-12) Former: (EDFD 9000) **Description** Independent research for Doctoral degree. Credit may be earned over a period of several semesters. Grades of S, U, or IP will be given.

## **Electrical and Computer Engineering**

### **EECE 6011 - Transformative Technologies in Engineering**

**Credit Hours:** 3 *Cross listing* CIVL 6011 **Description** Introduction to transformative engineering design, analysis, inspection, and management technologies such as Intelligent Transportation Systems, GIS, drones, information technologies, etc.; interdisciplinary project-based learning experience with industry focused problems. 0 \$45 per credit hour

### **EECE 6202 - Electrical Power Systems**

**Credit Hours:** (3) **Description** Investigation of problems associated with the transmission of electrical energy; load-flow studies, and fault analysis by use of symmetrical components. **PREREQUISITE(S):** TECH 2251 or equivalent.

### **EECE 6204 - Power Distribution Sys**

**Credit Hours:** (3) **Description** Distribution of power from transmission systems to users: primary and secondary feeders; voltage regulation; underground, overhead and network design; lightning and protective device coordination. **PREREQUISITE(S):** TECH 3440, 4262, or permission of instructor.

### **EECE 6205 - Modern Grid with Renewables**

**Credit Hours:** (3) **Description** Introduction to alternative energy, wind generator systems, photovoltaic (PV) systems, wave or ocean energy systems, high voltage DC transmission. **PREREQUISITE(S):** EECE 2201

### **EECE 6206 - Electrical Power Quality**

**Credit Hours:** (3) *Cross listing* EECE 4206. **Description** Power quality phenomenon voltage sags and interruptions, transient overvoltages, long-duration voltage variations, fundamental of harmonics, distributed generation and power

quality, power quality benchmarking and monitoring.  
**PREREQUISITE(S):** EECE 4201 and EECE 3203.

### **EECE 6213 - Antenna Theory/Design**

**Credit Hours:** (3) **Description** Theory of operation and design of antennas; determination of antenna radiation characteristics; introduction to antenna array theory.  
**PREREQUISITE(S):** TECH 3232 or equivalent.

### **EECE 6214 - Em Fields Laboratory**

**Credit Hours:** (1) **Description** Laboratory techniques associated with frequencies above 100 MHz. **COREQUISITE:** EECE 6215 or permission of instructor.  
**PREREQUISITE(S):** TECH 2822, 3232 and 3241 or equivalent.

### **EECE 6215 - Applied Em Fields**

**Credit Hours:** (3) **Description** Steady state and transient solutions of transmission line equations; plane waves; antennas in telecommunications.

### **EECE 6221 - Electronics III**

**Credit Hours:** (4) **Description** Applications of analog and digital electronic circuits; special purpose circuits and devices. Three lecture, three laboratory hours per week.

### **EECE 6222 - Digital Logic/Comp Dsgn**

**Credit Hours:** (3) **Description** Applications of digital system design using MSI, LSI, and VLSI circuits; design of arithmetic logic units, multiple input controllers, and practical interfacing techniques.

### **EECE 6230 - Data Communicatn System**

**Credit Hours:** (3) **Description** Data communications in information and computing systems; analog and digital means of transmitting and controlling information; organization and requirements of data communication systems, including modulation and demodulation, multiplexing, switching, error detection and correction.

### **EECE 6231 - Communication Theory**

**Credit Hours:** (3) **Description** Frequency and time domain; modulation, random signal theory; autocorrelation; noise, communication systems.

### **EECE 6232 - Discrete Signal Process**

**Credit Hours:** (3) **Description** Introduction to discrete-time signal analysis; includes discrete system concepts, discrete-time Fourier analysis, sampling of continuous-time signals, z-transform, and transform analysis of discrete time systems; structures for discrete-time systems and discrete filter design techniques. Standard engineering course fees apply. 3  
**PREREQUISITE(S):** EECE 3203 or permission by instructor.

### **EECE 6235 - Probabilistic Sys Anlyis**

**Credit Hours:** (3) **Description** Probability and statistics applied to electrical and computer engineering problems; probability and random variables; statistics and techniques for estimating them; techniques for characterization of signals using autocorrelation, cross-correlation and power spectra; determination of effects of discrete and analog filters on random signals, Bayesian detection and estimation; Markov random processes.

### **EECE 6241 - Solid State Physicl Elct**

**Credit Hours:** (3) **Description** Quantum concepts; statistics; crystal structure; conduction processes in solids; p-n junctions and devices; field effect devices; charge transfer devices. Grades of A-F, or IP will be given.

### **EECE 6242 - Electro-Optics**

**Credit Hours:** (3) **Description** Classical optics including Gaussian optics, Newtonian optics, and vergence theory; optical design with aberration concepts, F-numbers, pupils and stops; radiometry with respect to flux transfer calculations; light sources and detectors.

### **EECE 6243 - Linear Optical Systems \*\***

**Credit Hours:** (3) **Description** Review of Fourier techniques for analysis and design of linear systems, extension to 2-d methods; 2-d transforms applied to linear optical systems and data processing.

### **EECE 6251 - Control System Engr**

**Credit Hours:** (3) **Description**

Model electrical and mechanical systems using differential equations, transfer functions, and state space methods; Introduction to modeling of robot manipulators; Analyze feedback systems using time domain, root locus, and frequency response techniques; Stability analysis using Routh criterion; Design Proportional-Derivative-Integral (PID) controllers. Standard engineering course fees apply.

### EECE 6252 - Digital Control Systems

**Credit Hours:** (3) **Description** Problems involved with and analysis techniques applicable to digital control systems. Requires a prior knowledge of Laplace transforms. Basic knowledge of feedback control theory desirable. **COREQUISITE(S):** TECH 7401.

### EECE 6253 - Control Systems Lab

**Credit Hours:** (1) **Description** Investigation of fundamental properties associated with analysis of control systems, compensating networks, analog and digital computer simulations. **COREQUISITE:** EECE 6251 or 6252.

### EECE 6254 - Digital Control Sys Lab

**Credit Hours:** (1) **Description** Fundamental properties associated with digital control systems engineering; laboratory procedures in analysis of digital control systems, compensating networks, digital computer simulations and PLCs. **CORREQUISITES:** EECE 6252.

### EECE 6272 - Engineering Software

**Credit Hours:** (3) **Description** Procedural and object-oriented programming techniques using C and C++. Introduction to Unix. **COREQUISITE(S):** TECH 7401.

### EECE 6273 - Database Engineering

**Credit Hours:** (3) **Description** Logical database design emphasizing entity-relationship, relational, object-oriented, and logic data models; design theory for relational databases, relational query languages, and introduction to integration of database and knowledge-base systems for engineering applications; emerging trends in database machine design and implementation. **PREREQUISITE(S):** Permission of instructor.

### EECE 6275 - Network Programming

**Credit Hours:** (3) **Description** Introduction to engineering of computer networks, network hardware, and network software; design of software systems for network applications. **PREREQUISITE(S):** Permission of instructor.

### EECE 6276 - Adv Network Programming

**Credit Hours:** (3) **Description** Advanced methods for engineering software systems for network applications; topics include implementations of distributed object models, remote database connectivity, and reusable software components. **PREREQUISITE(S):** Permission of instructor.

### EECE 6277 - Dsp Microprocessors

**Credit Hours:** (4) **Description** Architecture and instruction set of fixed-point and floating-point devices; hardware interfacing, host communications, real-time signal generation, filtering, and code development using assembly language and C. **PREREQUISITE(S):** Permission of instructor.

### EECE 6278 - Computer Organization

**Credit Hours:** (3) **Description** Organization and structure of CPU, memory, operating system, I/O system organization and implementation issues; hardware and software integration and co-design. **PREREQUISITE(S):** TECH 6460 or equivalent, or permission of instructor.

### EECE 6710 - Computer Architecture

**Credit Hours:** (3) **Description** Architecture and design of computers, performance measure, instruction sets, datapaths, I/O systems, and memory hierarchies. **PREREQUISITE(S):** TECH 6462 or equivalent, or permission of instructor. Grades of S, U, or IP will be given.

### EECE 6711 - Fault Tolerant Comp Des

**Credit Hours:** (3) **Description** Evaluation of computer system design and reliability using reliability block diagrams, fault trees, reliability graphics, queuing networks, error detecting and correcting codes, and Markov models; principles of fault-tolerant hardware and software design.

### EECE 6712 - Embedded Systems

**Credit Hours:** (3) **Description** Introduction to hardware and software design of computing systems embedded in electronic devices; programmable processor design; peripherals, memories, interfacing, and hardware/software tradeoffs.

Laboratory involves use of synthesis tools, programmable logic, microcontrollers, and development of working embedded systems. **PREREQUISITE(S):** Permission of instructor.

### EECE 6720 - Intro Artificial Intelg

**Credit Hours:** (3) *Cross listing* (Same as COMP 6720.)  
**Description** (Same as COMP 6720.) Fundamentals of programming in LISP; central ideas of artificial intelligence, including heuristic search, problem solving, slot-and-filler structures, and knowledge representation.

### EECE 6730 - Expert Systems

**Credit Hours:** (3) *Cross listing* (Same as COMP 6730.)  
**Description** (Same as COMP 6730.) Fundamentals of programming in PROLOG, central ideas of expert system development, including knowledge representation, control structures, tools, knowledge acquisition, and knowledge engineering.

### EECE 6731 - Data Analytics and Visualization

**Credit Hours:** (3) *Cross listing* (same as COMP 6731).  
**Description** This course will cover the terminology, methodology, and applications of data analytics and visualization. Methods for visualizing data from a variety of engineering and scientific fields including both static and time varying data and methods for generating both surface and volume visualizations, predictive analytics, modeling, and visualizing big and complex data to gain perspective.

### EECE 6741 - Introduction to Neural Networks

**Credit Hours:** (3) Former: 6741 *Cross listing* (same as COMP 6741). **Description** Topics include machine learning approaches, learning algorithms; least-mean squares and gradient descent; supervised learning (perceptron, deep learning algorithms and its variants); unsupervised methods (Hebbian, self-organizing maps and autoencoders); computing platforms for neural networks; case studies. Standard Engineering Course Fees **PREREQUISITE(S):** COMP 2150 and MATH 3242, or permission of instructor.

### EECE 6745 - Introduction to Machine Learning

**Credit Hours:** (3) *Cross listing* COMP 6745 **Description** An introductory course on machine learning. Topics include hypotheses spaces, concept learning, supervised methods, unsupervised methods, classification, clustering, Bayesian methods, active learning, and reinforcement learning. **PREREQUISITE(S):** COMP 2150 or permission of instructor. Standard Letter

### EECE 6900-6909 - Special Topics in Electrical and Computer Engineering

**Credit Hours:** (1-3) **Description** Topics are varied.

### EECE 7001 - Professional Developmnt

**Credit Hours:** (3) **Description** Electrical and computer engineering research methods, development issues and ethics in academia and engineering practice. Students learn how to conduct literature search, write progress reports, publications and prepare and give presentations. **PREREQUISITE(S):** Permission of instructor.

### EECE 7012 - Fndtns/Software Engr

**Credit Hours:** (3) *Cross listing* (Same as COMP 7012-COMP 8012) **Description** (Same as COMP 7012-8012). Project management; Unified Process; software disciplines (requirements, analysis, design, implementation, testing); Unified Modeling Language; design patterns; mapping designs to code. Students work in teams to develop a significant software system. **PREREQUISITE(S):** Permission of instructor.

### EECE 7100 - Linear Sys Analysis

**Credit Hours:** (3) **Description** Systems concepts and mathematical tools including Z-transforms; analysis of systems, both continuous and discrete, in the time domain and frequency domain. **PREREQUISITE(S):** Permission of instructor. Grades of A-F, or IP will be given.

### EECE 7211 - Adv Elctrmgntc Field

**Credit Hours:** (3) **Description** Advanced studies in electromagnetic fields, radiation, and propagation of energy. **PREREQUISITE(S):** Permission of instructor.

### EECE 7214 - Image Processing

**Credit Hours:** (3) **Description** Theory and applications of digital image processing, sampling, quantization, enhancement and restoration of images; use of segmentation, descriptors, and pattern recognition; architectures for image processing. **PREREQUISITE(S):** Written proposal and permission of instructor

### EECE 7215 - Digital Signal Proc \*\*

**Credit Hours:** (3) **Description** Application of discrete transform theory to spectral analysis, digital filters, random signal analysis. **PREREQUISITE(S):** Written proposal and permission of instructor

### EECE 7216 - Computer Vision

**Credit Hours:** (3) **Description** Principles and applications of computer vision, advanced image processing techniques as applied to computer vision, shape analysis, and object recognition.

### EECE 7217 - Multimedia Info Process \*\*

**Credit Hours:** (3) **Description** Multimedia information retrieval models, advanced processing techniques, multimedia content analysis, pattern mining for information retrieval, query formation, intelligent query processing, and high dimensional data visualization.

### EECE 7219 - Pattern Recognition

**Credit Hours:** 3 **Description** Geometry of Euclidean space, vector spaces and subspaces, linear independence, linear transformations, eigenvalues and eigenvectors, decision theory, density estimation, dimensionality reduction, statistical classification and clustering, hidden Markov models, manifold learning, statistical learning theory, and ensemble learning. **Engineering PREREQUISITE(S):** Basic knowledge of Linear Algebra, Probability and Statistics, and Programming experience in a high level programming language (C/C++/MATLAB etc.) is required or permission by the instructor.

### EECE 7220 - Scientific Computing

**Credit Hours:** (3) **Description** Review of scientific computing mathematical preliminaries. Topics include numerical linear algebra, orthogonality, eigenvalues, boundary value problems, integral equations and Green's functions, numerical integration, basic iterative methods, preconditioning, parallel programming, and advanced topics.

**PREREQUISITE(S):** graduate standing or permission of instructor.

### EECE 7224 - Physically Based Animation

**Credit Hours:** (3) **Description** Introduction to the foundations of non-physically based geometric models, various physically based models and deformable models along with brief introduction to graphics and OpenGL. Specific models governing particle interactions, and movement of hair, smoke, fire, and clothes will be covered.

**PREREQUISITE(S):** graduate standing or permission of instructor.

### EECE 7230 - Solid State Devices

**Credit Hours:** (3) **Description** Internal function, limitations, and applications of unique components found in modern telecommunication designs; electro-optic devices, detectors, resonators, antenna, and negative resistance components.

### EECE 7231 - Communicatn Electronics

**Credit Hours:** (3) **Description** Analysis and design of small and large signal amplifiers; multistage amplifiers; analysis and design of oscillators; feedback and stability in amplifier design.

### EECE 7232 - Analog Comm Circ Dsgn

**Credit Hours:** (3) **Description** Design and applications of analog communication systems; transmitter and receiver technologies.

### EECE 7233 - Power Electronics

**Credit Hours:** (3) **Description** Power semiconductor switches, rectifiers, phase-controlled rectifiers, and other power control devices; power control applications.

### EECE 7234 - VLSI Design

**Credit Hours:** (3) **Description** This course teaches electronic IC design techniques for VLSI systems. Topics include fabrication process, design considerations and methodologies, fundamental structure, design flow, tools and techniques, design analysis and optimization, and stick diagram. Topics also include design rule checking (DRL), layout versus schematic (LVS), design synthesis and chip planning, clock tree and power routing, advanced high-speed and low-power CMOS design, asynchronous and adiabatic logic.

**PREREQUISITE(S):** 3000-level creative writing workshop in the same genre (fiction, poetry, or creative non-fiction), and permission of instructor.

### EECE 7243 - Fourier Optics

**Credit Hours:** (3) **Description** Analysis of two-dimensional linear systems, scalar diffraction theory, Fresnel and Fraunhofer diffraction; Fourier transforming properties of lenses, spatial frequency analysis of optical systems, optical information processing and holography.

**PREREQUISITE(S):** permission of instructor.

### EECE 7245 - Statistical Optics

**Credit Hours:** (3) **Description** Techniques for describing random processes applied to generation, propagation, imaging, and detection of light; statistical properties of light, coherence, imaging with inhomogeneous media, statistics of photoelectric detection of light. **PREREQUISITE(S):** ENGL 3601 or permission of instructor.

### EECE 7251 - Random Signals & Noise \*\*

**Credit Hours:** (3) **Description** Statistical methods for describing and analyzing random signals and noise; auto-correlation, cross-correlation, and spectral density functions; optimal linear filter theory. **PREREQUISITE(S):** ENGL 6618, or permission of instructor.

### EECE 7252 - Information Theory

**Credit Hours:** (3) **Description** Introduction to entropy and channel capacity, group codes, block codes, cyclic codes; application of coding techniques to improve system reliability; error correcting codes.

### EECE 7253 - Wireless Telecommunicatn

**Credit Hours:** (3) **Description** Principles of wireless telecommunication systems with emphasis on cellular telephony and on wireless data communication; requirements and standards along with physical layer properties and multiple access techniques including spread spectrum techniques (CDMA).

### EECE 7254 - Modern Telecom

**Credit Hours:** (3) **Description** Implementation and standards for communications systems; cellular telephony standards and/or wireless data standards utilizing CDMA techniques.

### EECE 7255 - Digital Communications

**Credit Hours:** (3) **Description** Source coding, signal representations, optimum receivers for A WGN channels, channel capacity issues, block codes, and convolution codes.

### EECE 7261 - Arch & Design Dig Comp

**Credit Hours:** (3) **Description** Advanced logical design of hardware and organization structure of digital computers; architectural properties and control strategies; processor and memory organizations, addressing and interrupt structures, and I/O controllers; hardware and software trade-offs, and speed considerations.

### EECE 7262 - Logicl Fndtns Artf Intl

**Credit Hours:** (3) *Cross listing* (Same as COMP 7750-8750) **Description** (Same as COMP 7750-8750) Logical foundations of artificial intelligence, predicate calculus, declarative knowledge, inference, resolution strategies, non-monotonic reasoning, induction, probabilistic logic, belief, state and change, and intelligent-agent architecture.

### EECE 7266 - Prolog Proc/Intel Syst

**Credit Hours:** (3) **Description** The engineering of intelligent systems using the PROLOG language for implementation; advanced PROLOG processing, hardware, and software architecture for PROLOG-based machines.

### EECE 7267 - Artfcl Intel In Lisp

**Credit Hours:** (3) **Description** Fundamentals of LISP programming, symbolic processing, searching, goal reduction, matching, problems and problem spaces, problem solving methods, and AI applications.

### EECE 7268 - Obj Oriented Data Engr

**Credit Hours:** (3) **Description** Design of hardware and software from a perspective of interacting objects that combine data and behavior; engineering data models, analysis and design processes, implementation, large engineering system issues, and reverse engineering; object-oriented database design for CASE, CAD/CAM, and related engineering database environments.

### EECE 7269 - Machine Learning & Applicatns



**Credit Hours:** (3) **Description** Data representation; similarity measures, linear and non-linear data projection; discriminate analysis; classifier design; supervised and unsupervised learning; evolutionary computing; and machine learning and applications.

### EECE 7273 - Modern Microprocessors

**Credit Hours:** (3) **Description** Introduction to capabilities of state-of-the-art microprocessors and their supporting components.

### EECE 7310 - Power System Stability/Control

**Credit Hours:** (3) **Description** Introduction to the power system stability problem, synchronous machine representation in stability issues, excitation and prime mover systems, control of active and reactive powers, small-signal and transient stability, voltage stability, methods of improving stability. **PREREQUISITE(S):** EECE 4201 and EECE 4202/EECE 6202 or permission of instructor.

### EECE 7318 - Introduction to Smart Grid

**Credit Hours:** (3) **Description** Introduction to smart grid, communications and control, advanced metering infrastructures, demand response, integration of renewable generations, energy storage options, wide area measurement, and smart grid cyber security. **PREREQUISITE(S):** graduate standing.

### EECE 7320 - Wind Energy Conversion Systems

**Credit Hours:** (3) **Description** Basics of wind energy conversion system, wind generators, grid integration issues of wind generators, solutions for transient stability and power quality issues of fixed-speed wind generator systems, fault ride through capability enhancement of variable speed wind generator systems, analysis of offshore wind farms. **PREREQUISITE(S):** graduate standing.

### EECE 7521 - Adv Control Syst Engr

**Credit Hours:** (3) **Description** Cascade and feedback compensation; analysis and control of nonlinear systems; introduction to optimal techniques.

### EECE 7522 - Stoch/Adapt Cntrl Thry

**Credit Hours:** (3) **Description** Principles and applications of deterministic and statistical design; random processes in automatic control.

### EECE 7523 - Thry Optical Cntrl Sys

**Credit Hours:** (3) **Description** State variable description of systems, maximum principle of Pontryagin, optimization of linear systems with quadratic performance measures, time and field optimal systems.

### EECE 7524 - Parameter Est & Cntrls

**Credit Hours:** (3) **Description** Principles of parameter estimation and application to systems engineering.

### EECE 7720 - Artificial Intelligence

**Credit Hours:** (3) *Cross listing* (Same as COMP 7720-COMP 8720) **Description** (Same as COMP 7720-8720). Central issues of artificial intelligence, including game playing, planning, machine learning, common-sense reasoning, perception and action; implementations in LISP.

### EECE 7740 - Neural Networks

**Credit Hours:** (3) *Cross listing* (Same as COMP 7740-COMP 8740) **Description** (Same as COMP 7740-8740). Learning algorithms for multilayer perceptrons, least-mean squares, back-propagation and its variants, cascade-correlation, other supervised learning algorithms; unsupervised methods, including Hebbian, competitive and reinforcement learning; applications to associative memories, combinatorial optimization, component analysis, function approximation, pattern classification; theory of neurodynamics, including equilibrium, stability, and computational power.

### EECE 7900-7910 - Special Topics in Electrical Engineering

**Credit Hours:** (1-3) **Description** Topics are varied.

### EECE 7991 - Independent Study I

**Credit Hours:** (1-3) **Description** Independent investigation of a problem selected in consultation with instructor; report required. Repeatable by permission. Grades of A-F, or IP will be given. Repeatable by permission

### EECE 7992 - Independent Study II

**Credit Hours:** (1-3) **Description** Independent investigation of a problem selected in consultation with instructor; report required. Repeatable by permission. Grades of A-F, or IP will be given. Repeatable by permission

### EECE 7993 - Project & Report

**Credit Hours:** (3) **Description** Independent study for students who select the non-thesis option in the Masters program. Students demonstrate ability to pursue, complete, and report on a research project related to Electrical and Computer Engineering. Written and oral report prepared for acceptance by faculty committee, Grades of A-F, or IP will be given.

### EECE 7996 - Thesis

**Credit Hours:** (1-12) **Description** Master's thesis. Only six hours are applicable to the degree. Grades of S, U, or IP will be given.

### EECE 8001 - Professional Development

**Credit Hours:** (3) **Description** Electrical and computer engineering research methods, development issues and ethics in academia and engineering practice. Students learn how to conduct literature search, write progress reports, publications and prepare and give presentations.

### EECE 8012 - Fndtns/Software Engr

**Credit Hours:** (3) *Cross listing* (Same as COMP 7012-COMP 8012) **Description** (Same as COMP 7012-8012). Project management; Unified Process; software disciplines (requirements, analysis, design, implementation, testing); Unified Modeling Language; design patterns; mapping designs to code. Students work in teams to develop a significant software system.

### EECE 8100 - Linear Sys Analysis

**Credit Hours:** (3) **Description** Systems concepts and mathematical tools including Z-transforms; analysis of systems, both continuous and discrete, in the time domain and frequency domain.

### EECE 8211 - Adv Electrmngntc Field

**Credit Hours:** (3) **Description** Advanced studies in electromagnetic fields, radiation, and propagation of energy.

### EECE 8214 - Image Processing

**Credit Hours:** (3) **Description** Theory and applications of digital image processing, sampling, quantization, enhancement and restoration of images; use of segmentation, descriptors, and pattern recognition; architectures for image processing.

### EECE 8215 - Digital Signal Proc \*\*

**Credit Hours:** (3) **Description** Application of discrete transform theory to spectral analysis, digital filters, random signal analysis.

### EECE 8216 - Computer Vision

**Credit Hours:** (3) **Description** Principles and applications of computer vision, advanced image processing techniques as applied to computer vision, shape analysis, and object recognition.

### EECE 8217 - Multimedia Info Process \*\*

**Credit Hours:** (3) **Description** Multimedia information retrieval models, advanced processing techniques, multimedia content analysis, pattern mining for information retrieval, query formation, intelligent query processing, and high dimensional data visualization.

### EECE 8219 - Pattern Recognition

**Credit Hours:** 3 **Description** Geometry of Euclidean space, vector spaces and subspaces, linear independence, linear transformations, eigenvalues and eigenvectors, decision theory, density estimation, dimensionality reduction, statistical classification and clustering, hidden Markov models, manifold learning, statistical learning theory, and ensemble learning. Engineering **PREREQUISITE(S):**

Basic knowledge of Linear Algebra, Probability and Statistics, and Programming experience in a high level programming language (C/C++/MATLAB etc.) is required or permission by the instructor.

### EECE 8220 - Scientific Computing

**Credit Hours:** (3) **Description** Review of scientific computing mathematical preliminaries. Topics include numerical linear algebra, orthogonality, eigenvalues, boundary value problems, integral equations and Green's functions, numerical integration, basic iterative methods, preconditioning, parallel programming, and advanced topics.

**PREREQUISITE(S):** graduate standing or permission of instructor.

### EECE 8224 - Physically Based Animation

**Credit Hours:** (3) **Description** Introduction to the foundations of non-physically based geometric models, various physically based models and deformable models along with brief introduction to graphics and OpenGL. Specific models governing particle interactions, and movement of hair, smoke, fire, and clothes will be covered.

**PREREQUISITE(S):** graduate standing or permission of instructor.

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**Credit Hours:** (3) **Description** Internal function, limitations, and applications of unique components found in modern telecommunication designs; electro-optic devices, detectors, resonators, antenna, and negative resistance components.

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**Credit Hours:** (3) **Description** Analysis and design of small and large signal amplifiers; multistage amplifiers; analysis and design of oscillators; feedback and stability in amplifier design.

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**Credit Hours:** (3) **Description** Design and applications of analog communication systems; transmitter and receiver technologies.

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**Credit Hours:** (3) **Description** This course teaches electronic IC design techniques for VLSI systems. Topics include fabrication process, design considerations and methodologies, fundamental structure, design flow, tools and techniques, design analysis and optimization, and stick diagram. Topics also include design rule checking (DRL), layout versus schematic (LVS), design synthesis and chip planning, clock tree and power routing, advanced high-speed and low-power CMOS design, asynchronous and adiabatic logic.

### EECE 8243 - Fourier Optics

**Credit Hours:** (3) **Description** Analysis of two-dimensional linear systems, scalar diffraction theory, Fresnel and Fraunhofer diffraction; Fourier transforming properties of lenses, spatial frequency analysis of optical systems, optical information processing and holography.

### EECE 8245 - Statistical Optics

**Credit Hours:** (3) **Description** Techniques for describing random processes applied to generation, propagation, imaging, and detection of light; statistical properties of light, coherence, imaging with inhomogeneous media, statistics of photoelectric detection of light.

### EECE 8251 - Random Signals & Noise \*\*

**Credit Hours:** (3) **Description** Statistical methods for describing and analyzing random signals and noise; auto-correlation, cross-correlation, and spectral density functions; optimal linear filter theory.

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**Credit Hours:** (3) **Description** Introduction to entropy and channel capacity, group codes, block codes, cyclic codes; application of coding techniques to improve system reliability; error correcting codes.

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### EECE 8254 - Modern Telecom

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### EECE 8255 - Digital Communications

**Credit Hours:** (3) **Description** Source coding, signal representations, optimum receivers for A WGN channels, channel capacity issues, block codes, and convolution codes.

### EECE 8261 - Arch & Design Dig Comp

**Credit Hours:** (3) **Description** Advanced logical design of hardware and organization structure of digital computers; architectural properties and control strategies; processor and memory organizations, addressing and interrupt structures, and I/O controllers; hardware and software trade-offs, and speed considerations.

### EECE 8262 - Logicl Fndtns Artf Intl

**Credit Hours:** (3) *Cross listing* (Same as COMP 7750-8750) **Description** (Same as COMP 7750-8750) Logical foundations of artificial intelligence, predicate calculus, declarative knowledge, inference, resolution strategies, non-monotonic reasoning, induction, probabilistic logic, belief, state and change, and intelligent-agent architecture.

### EECE 8266 - Prolog Proc/Intel Syst

**Credit Hours:** (3) **Description** The engineering of intelligent systems using the PROLOG language for implementation; advanced PROLOG processing, hardware, and software architecture for PROLOG-based machines.

### EECE 8267 - Artfcl Intel In Lisp

**Credit Hours:** (3) **Description** Fundamentals of LISP programming, symbolic processing, searching, goal reduction, matching, problems and problem spaces, problem solving methods, and AI applications.

### EECE 8268 - Obj Oriented Data Engr

**Credit Hours:** (3) **Description** Design of hardware and software from a perspective of interacting objects that combine data and behavior; engineering data models, analysis and design processes, implementation, large engineering system issues, and reverse engineering; object-oriented database design for CASE, CAD/CAM, and related engineering database environments.

### EECE 8269 - Machine Learning & Applicatns

**Credit Hours:** (3) **Description** Data representation; similarity measures, linear and non-linear data projection; discriminate analysis; classifier design; supervised and unsupervised learning; evolutionary computing; and machine learning and applications.

### EECE 8273 - Modern Microprocessors

**Credit Hours:** (3) **Description** Introduction to capabilities of state-of-the-art microprocessors and their supporting components. **PREREQUISITE(S):** Permission of instructor.

### EECE 8310 - Power System Stability/Control

**Credit Hours:** (3) **Description** Introduction to the power system stability problem, synchronous machine representation in stability issues, excitation and prime mover systems, control of active and reactive powers, small-signal and transient stability, voltage stability, methods of improving stability. **PREREQUISITE(S):** EECE 4201 and EECE 4202/EECE 6202 or permission of instructor.

### EECE 8318 - Introduction to Smart Grid

**Credit Hours:** (3) **Description** Introduction to smart grid, communications and control, advanced metering infrastructures, demand response, integration of renewable generations, energy storage options, wide area measurement, and smart grid cyber security. **PREREQUISITE(S):** graduate standing.

### EECE 8320 - Wind Energy Conversion Systems

**Credit Hours:** (3) **Description** Basics of wind energy conversion system, wind generators, grid integration issues of wind generators, solutions for transient stability and power quality issues of fixed-speed wind generator systems, fault ride through capability enhancement of variable speed wind generator systems, analysis of offshore wind farms. **PREREQUISITE(S):** graduate standing.

### EECE 8521 - Adv Control Syst Engr

**Credit Hours:** (3) **Description** Cascade and feedback compensation; analysis and control of nonlinear systems; introduction to optimal techniques.

### EECE 8522 - Stoch/Adapt Cntrl Thry

**Credit Hours:** (3) **Description** Principles and applications of deterministic and statistical design; random processes in automatic control. **PREREQUISITE(S):** Permission of instructor.

### EECE 8523 - Thry Optical Cntrl Sys

**Credit Hours:** (3) **Description** State variable description of systems, maximum principle of Pontryagin, optimization of linear systems with quadratic performance measures, time and field optimal systems.

### EECE 8524 - Parameter Est & Cntrls

**Credit Hours:** (3) **Description** Principles of parameter estimation and application to systems engineering.

### EECE 8720 - Artificial Intelligence

**Credit Hours:** (3) *Cross listing* (Same as COMP 7720-COMP 8720) **Description** (Same as COMP 7720-8720). Central issues of artificial intelligence, including game playing, planning, machine learning, common-sense reasoning, perception and action; implementations in LISP.

### EECE 8740 - Neural Networks

**Credit Hours:** (3) *Cross listing* (Same as COMP 7740-COMP 8740) **Description** (Same as COMP 7740-8740). Learning algorithms for multilayer perceptrons, least-mean squares, back-propagation and its variants, cascade-correlation, other supervised learning algorithms; unsupervised methods, including Hebbian, competitive and reinforcement learning; applications to associative memories, combinatorial optimization, component analysis, function approximation, pattern classification; theory of neurodynamics, including equilibrium, stability, and computational power.

### EECE 8900-8910 - Special Topics in Electrical Engineering

**Credit Hours:** (1-3) **Description** Topics are varied.

### EECE 8991 - Projects I

**Credit Hours:** (1-3) **Description** Independent investigation of a problem selected in consultation with instructor; report required. Repeatable by permission. Grades of A-F, or IP will be given. Repeatable by permission

### EECE 8992 - Projects II

**Credit Hours:** (1-3) **Description** Independent investigation of a problem selected in consultation with instructor; report

required. Repeatable by permission. Grades of A-F, or IP will be given. Repeatable by permission

### EECE 9000 - Dissertation

**Credit Hours:** (1-12) **Description** Grades of S, U, or IP will be given.

### ENGR 6900-6910 - Special Topics in Engineering

**Credit Hours:** 1-3 **Description** Topics vary by semester, see online class schedule listing.

### Elementary Education

### ELED 6250 - Tech Tools Thnkg/Lrng

**Credit Hours:** (3)

### Engineering Technology

### TECH 6234 - Microproc Interface Technology

**Credit Hours:** (4) **Description** Analysis and design of microprocessor based systems utilizing serial and parallel input/output as well as analog to digital and digital to analog converters. Programs are developed to verify operation of the interfacing hardware. Team projects and written reports. Three lectures, three laboratory hours per week.

### TECH 6242 - Client Application Technology

**Credit Hours:** (3) Former: (CETH) **Description** Hypertext Markup Language (HTML), XML, and script languages. Three lecture hours per week.

### TECH 6262 - Modern Programming

**Credit Hours:** (3) Former: (CETH) **Description** Application of Java and Java Script programming languages to problems from selected area of engineering technology; data collecting, modeling techniques, constraints, program development and validation. Three lecture hours per week.

### TECH 6263 - Server Application Technology

**Credit Hours:** (4) Former: (CETH) **Description** Java exception handling, multithreading, files and streams; JDBC, Servlets, JSP, and JavaBeans server-side software. Team projects include written reports. Three lecture hours, three laboratory hours per week. Grades of A-F, or IP will be given.

## **TECH 6272 - Operating Systems**

**Credit Hours:** (4) **Description** Introduction to Operating systems with focus on Microsoft Windows Server and Linux OS. The course teaches the basic structure of operating systems with focus on installation/configuration options, services installation and functionality, network capabilities including processes (DNS/DHCP) and virtualization, memory management (physical, virtual memory), storage development and sharing, device management, file management (implementation, sharing, security), and introduction to directory services systems. \$45 per credit hour  
**PREREQUISITE(S):** TECH 3232 or equivalent.

## **TECH 6281 - Computer Network Technology**

**Credit Hours:** (4) Former: (CETH) **Description** Local area networks; covering the bottom four layers of the OSI mode; physical, datalink, network and transportation and application. Extensive laboratory coverage of the installation, configuration and administration of routers, switches and other networking devices. Three lecture hours, three laboratory hours per week.

## **TECH 6381 - Principles of Supervision**

**Credit Hours:** (3) Former: (METH) **Description** Practical approach to supervisory management including functions of planning, organization, staffing, employee motivation; coverage of contemporary issues including legal aspect of supervision as well as other regulatory concerns, such as occupational safety, health and labor relations.

## **TECH 6460 - Work Design/Improvement**

**Credit Hours:** (3) Former: (METH) **Description** Analytical techniques and concepts for work methods improvement, lean operation for production and distribution; performance measurement and evaluation; continuous improvement; fundamentals of human factors and ergonomics; work measurement using time study, predetermined time study systems, work sampling and development of standard data.

## **TECH 6462 - Quality improvement**

**Credit Hours:** (3) Former: (METH) **Description** Statistical methods for quality analysis and improvement; control charts for variables and attributes, industrial sampling; defect prevention using the Poka-Yoke System; reliability; acceptance sampling; Quality standards, continuous improvement; use of computer software for data analysis and presentation. Two lecture hours, three laboratory hours per week.

## **TECH 6463 - Quality Systems**

**Credit Hours:** (3) **Description** Investigation and application of quality subjects and techniques used to ensure proper quality outcomes; quality standards (ISO, etc.), TLS; process validation including CAPA, GD&T, CMM, metrology and gage R&R. Two lecture hours, three laboratory hours per week. **PREREQUISITE(S):** Permission of instructor.

## **TECH 6464 - Production Control Systems**

**Credit Hours:** (3) Former: (METH) **Description** Functions of planning and controlling production and distribution operations; concepts of JIT, MRP, MRPII, ERP, and Japanese manufacturing techniques; analytical techniques and concepts for line balancing, production and process control, demand management and project management. **PREREQUISITE(S):** Permission of instructor. **COREQUISITE(S):** TECH 4460, or permission of instructor.

## **TECH 6466 - Facility Design**

**Credit Hours:** (3) Former: (METH) **Description** (METH). Integrated approach to design and layout for production and distribution facilities with respect to workstation design, material handling, project and resource planning, production control; use of Computer Aided Design, scheduling and analytical software. Team projects, written reports and oral presentations. **PREREQUISITE(S):** Permission of instructor.

## **TECH 6472 - Computer Aided Design**

**Credit Hours:** (3) Former: (METH) **Description** Overview of CAD technology, hardware and software options; parametric solid modeling principles; applications to produce computer generated models, assemblies, photo-realistic renderings and working drawings. Two lecture hours, three laboratory hours per week. **PREREQUISITE(S):** permission of instructor.

## **TECH 6474 - Automation and Robotics**

**Credit Hours:** (3) Former: (METH) **Description** Concepts of automation applied to production, distribution, machine vision and industrial robotics. Team projects including written reports. Two lecture hours, three laboratory hours per week. **PREREQUISITE(S):** TECH 1811, TECH 3440 and PHYS 2010.

### **TECH 6476 - Computer Aided Manufacturing**

**Credit Hours:** (3) Former: (METH) **Description** Computer numerical control programming by manual data input and distributed numerical control by computer assistance; system assessment of CNC machines; components, controls, and tooling for integrated manufacturing environment. Two lecture hours, three laboratory hours per week. **PREREQUISITE(S):** TECH 4472/TECH 6472

### **TECH 6571 - Tool Design**

**Credit Hours:** (3) Former: (METH) **Description** Design of tooling and work holding systems for the integrated manufacturing environment; geometric dimensioning and tolerancing, fast change-over techniques, hydraulic and pneumatic circuits, achieving world class quality through design. Two lecture hours, three laboratory hours per week. **PREREQUISITE(S):** TECH 4472/TECH 6472

### **TECH 6821 - Microwave Technology**

**Credit Hours:** (4) Former: (EETH) **Description** Transition line principles for coax, waveguide and fiber; use of Smith Charts for impedance matching; principles of microwave generation and propagation; measurements such as impedance, antenna gain and VSWR; antenna types, characteristics; radiation patterns. Three lecture hours, three laboratory hours per week. Grades of S, U, or IP will be given.

### **TECH 6823 - Adv Programmable Logic Control**

**Credit Hours:** (3) Former: (EETH) **Description** Advanced applications of programmable logic controllers, including analog I/O techniques and computer interfacing. Team project including written report. Two lecture hours, three laboratory hours per week.

### **TECH 7015 - App Stat Meth Industry**

**Credit Hours:** (3) **Description** Application of statistical concepts to production processes and data gathering in

industry including frequency, distribution, location and dispersion, probability distributions, confidence limits, significance tests, hypothesis testing and industrial sampling.

### **TECH 7020 - Engineering Technology Communications \*\***

**Credit Hours:** 3 **Description** Investigations into the development and writing of technical research, emphasizing literature review in technology, review of technical specification format, proposal writing, and preparation of technical paper for international conferences. Written and oral presentations will be stressed in the course.

**PREREQUISITE(S):** Permission of instructor.

### **TECH 7105 - Project Plan & Scheduling \*\***

**Credit Hours:** (3) **Description** Contemporary methods used in project planning and scheduling; emphasis on critical path method (CPM) with computer application; solution of actual problems stressed. Deep dive through the Project Management Body of Knowledge (PMBOK) is accomplished along with a progression of project management scenarios to analyze.

### **TECH 7233 - Adv Software Appl**

**Credit Hours:** (3) **Description** Use of compilers, assemblers, program translators, application generators, program generators; application software for computer-aided design and data communications. Two lecture, three laboratory hours per week.

### **TECH 7263 - Adv Dgitl Circuit/App**

**Credit Hours:** (3) **Description** Pragmatic treatment of analysis, synthesis, and applications of digital integrated circuits and systems. Two lecture, three laboratory hours per week.

### **TECH 7273 - Adv Microproc Arch**

**Credit Hours:** (3) **Description** Structure of the microprocessor, Bit-slice and monolithic systems; ALU design, data transfer and storage registers, and control unit logic; microprogramming techniques. Three lecture hours per week.

### **TECH 7283 - Adv Data Acquisition**

**Credit Hours:** (3) **Description** Use of digital and analog circuits to accomplish the computer analysis of empirical data; transducers, digital and analog conversions, linear and operational amplifiers, interfacing techniques; data scaling and manipulation. Two lecture, three laboratory hours per week.

### **TECH 7401 - Lean Fundamentals \*\***

**Credit Hours:** (3) **Description** Basic concepts and terminology of Lean, including review of published seminal works and case studies. Concepts covered include: kanban, visual factory & 5S, kaizen, standard work, takt time, flow, poke-yoke, PDCA, SMED and other tools & techniques of Lean.

### **TECH 7402 - Adv Quality Control**

**Credit Hours:** (3) **Description** Methods for improved process and product design; cost of quality, measurement systems analysis, process capability, design of experiments and analysis, continuous improvement and review of quality standards. Grades of A-F, or IP will be given.

### **TECH 7404 - Wrld/Clas Manfct Concpt \*\***

**Credit Hours:** (3) **Description** World-class manufacturing and Lean concepts including Value Stream Mapping, Training Within Industry (TWI), Standard Work, 5S tools, Ergonomics, Human factors and Cellular Manufacturing. COREQUISITE: TECH 7401

### **TECH 7406 - Material Handling/Auto**

**Credit Hours:** (3) **Description** Analysis, design, and evaluation of traditional and contemporary approaches to materials handling; analytical and computer procedures for designing handling systems. Grades of A-F, or IP will be given.

### **TECH 7408 - Production Processes**

**Credit Hours:** (3) **Description** A coordinated study of manufacturing processes and equipment, operation sequence planning, economic aspects of equipment selection, tooling and processing a product from product design to final assembly for quantity production.

### **TECH 7414 - Manuf Strat/Syst Design \*\***

**Credit Hours:** (3) **Description** Manufacturing strategy and systems design, including concepts of value stream mapping,

theory of constraints, lean and six sigma (TLS) combined use, implementing and sustaining change and overcoming resistance, executive alignment and strategy.

COREQUISITE(S): TECH 7401

### **TECH 7801 - Advanced Instrumentation**

**Credit Hours:** (3) **Description** Review of basic analog and digital instruments, applications of advanced communication equipment, such as digital spectrum analyzer, TDR, computer aided measurement, and industrial instruments. Course concludes with virtual instrumentation. Two lecture, three laboratory hours per week.

### **TECH 7811 - Tech Elect Comm System**

**Credit Hours:** (3) **Description** Technical and economic aspects in the implementation and operation of publicly and privately owned analog and digital communication systems, wired and wireless communications, and comparison of different methods of signal transmission. Three lecture hours per week.

### **TECH 7821 - Adv Microwave Tech**

**Credit Hours:** (3) **Description** Microwave theory and instrument applications, including techniques for measuring power, frequency, impedance, VSWR, reflection coefficient, use of Smith chart, steady state and transient response of transmission lines, high frequency generators, and computer aided design and analysis of array antennas. Two lecture, three laboratory hours per week.

### **TECH 7822 - Ind Press Control Syst**

**Credit Hours:** (3) **Description** Simulation and pragmatic analysis of closed loop industrial control systems using programmable logic controllers; practical considerations of control loop quality and stability; applications of digital computer for direct and supervisory control and on-line analysis. Two lecture, three laboratory hours per week.

### **TECH 7831 - Adv Int Circuits Tech**

**Credit Hours:** (3) **Description** Theory and applications of integrated circuits and systems, emphasizing linear integrated circuits; characteristics, power requirements, and applications to amplifiers, oscillators, demodulators, wave shaping circuits, active filters, converters, and troubleshooting techniques. Two lecture, three laboratory hours per week.



## TECH 7841 - Fiber Optics in Comm

**Credit Hours:** (3) **Description** Implementation and analysis of fiber optics; comparison of coax and fiber, bandwidth and rate of data transmission using fiber; emphasis on single and multimode fiber.

## TECH 7991 - Projects I \*\*

**Credit Hours:** (1-3) **Description** Independent investigation of a problem selected in consultation with instructor; report required. Proposal required for attaining a permit.

## TECH 7992 - Projects II

**Credit Hours:** (1-3) **Description** Independent investigation of a problem selected in consultation with instructor; report required. Proposal required for attaining a permit.

## TECH 7993 - Internship In Engr Tech

**Credit Hours:** (1-3) **Description** Practical experience in engineering technology; students are placed with governmental or private organizations; project must be approved and supervised by department faculty; academic credit granted on certification of cooperating agency and acceptance by the supervising faculty of written report. Proposal required for attaining a permit. NOTE: May be repeated for total of 6 semester hours credit, but no more than 3 credit hours may be applied as an elective. Number of credit hours to enroll depends on number of hours worked per week: 10-15 hours=1 credit hour; 16-30 hours=2 credit hours; 31-40 hours=3 credit hours. Work done as an intern can not be used to fulfill project requirements in TECH 7991 or TECH 7992

## TECH 7994 - Seminar

**Credit Hours:** (1) **Description** Presentations by faculty, members of local industry, and graduate students. May be repeated for up to 6 hours credit. Must be taken at least 3 times to count as an elective in the master's program. Not more than 3 credit hours may be applied as an elective. May be repeated for up to 6 hours credit. Must be taken at least 3 times to count as an elective in the master's program. Not more than 3 credit hours may be applied as an elective

## TECH 7996 - Thesis

**Credit Hours:** (1-6) **Description** Writing of the thesis with emphasis on adequate setup of the problem, collection of data, their use, and conclusions. Students must present in writing a

proposal acceptable to the graduate committee under whose direction the thesis is to be written. Grades of S, U, or IP will be given.

## English

### ENGL 6243 - Studies in British Literature

**Credit Hours:** (3) **Description** Selected literature from a variety of periods in British literary history. May be repeated for a maximum of 6 credit hours with change in course content. **PREREQUISITE(S):** Permission of instructor is required.

### ENGL 6346 - Studies in American Literature

**Credit Hours:** (3) **Description** Detailed study of selected cultural ideas as they reflect on and are reflected by American literature. May be repeated for a maximum of 6 credit hours with change in course content. **PREREQUISITE(S):** Permission of instructor is required.

### ENGL 6454 - Studies in Forms & Genres

**Credit Hours:** (3) **Description** Study of a particular literary form and/or genre. May be repeated for a maximum of 6 credit hours with change in course content. **PREREQUISITE(S):** Permission of instructor is required.

### ENGL 6500 - Lang Skills For Intrntl

**Credit Hours:** (3) **Description** English majors may not use this course to fulfill degree requirements. Grades of S, U, or IP will be given. May be repeated for a maximum of 6 credit hours.

### ENGL 6533 - ESL/EFL in Multicultural Settings

**Credit Hours:** (3) **Description** Approaches to working with ESL or EFL students in multicultural settings. May be repeated for a maximum of 6 credit hours

### ENGL 6610 - Creative Writing/Translation

**Credit Hours:** (3) **Description** Study and practice in translating poetry, fiction, or non-fiction; use of creative writing as tool in teaching of foreign language. May be repeated for credit with change of topic or genre.

### ENGL 6611 - English Studies/Internl Locale

**Credit Hours:** (3-6) **Description** Blended course of on-campus and national or international study and research in specific areas related to topic culminating in an integrative experience through individual and/or group projects. Varied topics may require studies of relationships of culture to text and language, history, analysis, documentation, and/or production of text and language. Course may be repeated, but only 6 credit hours may be earned towards a degree.

### ENGL 6618 - Document Design \*\*

**Credit Hours:** (3) **Description** Theories of visual and written communication, focusing on the interrelationship between visual and verbal elements; practice in effective design using layout and graphics software; working on client projects in a collaborative setting.

### ENGL 6619 - Web Design/Online Writing \*\*

**Credit Hours:** (3) **Description** Principles and techniques of creating online user help for software and usable web sites; emphasis on needs of technical writers in professional development environment; task analysis, information architecture, content management, single sourcing, visual rhetoric, navigation, usability testing; technology tools intensive. Students who have received credit for ENGL 4617 cannot take this course for credit. Grades of A-F, or IP will be given.

### ENGL 6620 - Digital Rhetoric and Writing

**Credit Hours:** 3 **Description** This course focuses on contemporary theories and practices in digital rhetoric and writing, preparing students entering both the academic field and the private sector with scholarship and trends surrounding digital rhetoric. Standard Letter

### ENGL 6701 - Being an English Teacher

**Credit Hours:** (3) **Description** The nature and teaching of English. NOTE: This course does not contribute toward teacher licensure.

### ENGL 7000 - Literary Research

**Credit Hours:** (3) **Description** Various approaches to literary scholarship and research methodology; introduction to professional standards, bibliographical methods, and procedures of scholarship and criticism. NOTE: This course is

required for Literature majors and should be taken in the first year of graduate study. NOTE: This course is required for Literature majors and should be taken in the first year of graduate study.

### ENGL 7001 - Acad Genre and Sch Pub

**Credit Hours:** (3) **Description** Study and application of interpretive strategies to texts pertinent to professional writing and composition studies.

### ENGL 7003 - Thry/Prac Tchng Comp

**Credit Hours:** (3) **Description** Designed for graduate assistants teaching English 1010. Emphasis on the ways and techniques of teaching rudiments of English composition on college level. Each graduate teaching assistant in the Department of English must enroll in English 7003-8003 before or concurrent with first teaching assignment.

### ENGL 7008 - Thry/Prac Tchng Online \*\*

**Credit Hours:** (3) **Description** Studying the pedagogy of online teaching and preparing for teaching online. Students are required to complete the course to qualify for teaching online for the Department of English.

### ENGL 7010 - Writ./Comm Cent. Theory/Meth

**Credit Hours:** (3) *Cross listing* COMM 7010 **Description** Study of writing and communication center theory and methodology. Prepares graduate students for professional work as writing and communication center consultants and administrators.

### ENGL 7012 - Seminar Health Comm \*\*

**Credit Hours:** (3) *Cross listing* (same as COMM 7012-COMM 8012). **Description** Examines current issues in health communication research, including patient-provider relationships, new technologies and health promotion, and health organizations.

### ENGL 7013 - Wkshp Hlth Care Writing \*\*

**Credit Hours:** (3) **Description** Textual and contextual analysis of the kinds of writing produced for expert audiences in the healthcare industry and the academic research community; practice in writing documents such as technical

proposals, clinical research reports, FDA documentation, and papers for publication.

### **ENGL 7014 - Wkshp Public Hlth Care Writing \*\***

**Credit Hours:** (3) **Description** Theoretical understanding and skill-based practice in communicating healthcare information (patient education materials, public health care information, patient instructions) to a generally non-expert audience; rhetorical and analytical tools for shaping the information; practical skills for managing group projects and processes; and the opportunity to develop them in a workshop setting.

### **ENGL 7020-7049 - Special Topics in English**

**Credit Hours:** (3)

### **ENGL 7100 - Independent Study \*\***

**Credit Hours:** (1-3) **Description** Focuses on a selected topic dealing with language study or a literary form, theme, figure, or movement. Topic chosen by student and approved by student's advisor and Department Chair. Can be used only as an elective. Grades of A-F, or IP will be given.

### **ENGL 7211 - Medieval Literature**

**Credit Hours:** (3) **Description** Studies of selected literary texts from the Middle Ages.

### **ENGL 7230 - Chaucer**

**Credit Hours:** (3) **Description** Studies of works by Geoffrey Chaucer in Middle English. **PREREQUISITE(S):** Permission of instructor.

### **ENGL 7242 - English Renaissance Lit**

**Credit Hours:** (3) **Description** Survey of the major works of the Renaissance. **PREREQUISITE(S):** ENGL 7601.

### **ENGL 7254 - English Lit 17c**

**Credit Hours:** (3) **Description** Study of the poetry and prose of seventeenth-century England. **PREREQUISITE(S):** ENGL 7603.

### **ENGL 7255 - Shakespeare**

**Credit Hours:** (3) **Description** Study of the language, contexts, and themes of Shakespeare's drama and poetry. May be repeated for a maximum of 6 credit hours when topic changes.

### **ENGL 7256 - Milton**

**Credit Hours:** (3) **Description** Study of Milton's poetry.

### **ENGL 7264 - 18th-Century British Lit**

**Credit Hours:** (3) **Description** Study of drama, fiction, poetry, and essays from Restoration and eighteenth-century Britain.

### **ENGL 7276 - English Lit Romantic**

**Credit Hours:** (3) **Description** Exploration of major authors, themes, and/or movements in British Romantic literature. Maybe repeated up to 9 hours with change of topic

### **ENGL 7278 - Victorian Literature**

**Credit Hours:** (3) **Description** Study of one or more aspects of poetry, prose, fiction or drama of the Victorian period and the historical and social circumstances in which they were produced. May be repeated 10 times for a maximum of 30 credit hours

### **ENGL 7281 - Studies in Early American Literature**

**Credit Hours:** (3) **Description** Studies in selected topics in American Literature from European-American contact until 1800. May be repeated for a maximum of 6 credit hours when topic changes. May be repeated 10 times for a maximum of 30 credit hours Grades of A-F, or IP will be given.

### **ENGL 7292 - Modern British Poetry**

**Credit Hours:** (3) **Description** Study of important British and UK poetry written from 1890 to the present. May be repeated 10 times for a maximum of 30 credit hours

### **ENGL 7293 - Modern British Drama**

**Credit Hours:** (3) **Description** Study of British drama from Oscar Wilde to the present. May be repeated for a maximum of 6 credit hours with change of genre

### **ENGL 7294 - Studies in 19th-Century American Literature**

**Credit Hours:** (3) **Description** Studies in selected topics in American Literature from 1800-1900. May be repeated for a maximum of 6 credit hours when topic changes.

### **ENGL 7296 - Stud British Novel**

**Credit Hours:** (3) **Description** Studies in selected periods or topics in the British novel. May be repeated for a maximum of 9 credit hours when topic changes. May be repeated for a maximum of 9 credit hours

### **ENGL 7326 - African American Literature of Memphis and the Mid-South**

**Credit Hours:** (3) **Description** Focuses on the rise of African American literature from the cultural matrix that became Memphis, a gathering point and crossroads for African American writers of all genres from 1867 Reconstructionist writings to the present southern Hip Hop Writers movement. May be repeated for a maximum of 9 credit hours

### **ENGL 7327 - Studies in Form and Genre: African American Literature**

**Credit Hours:** (3) **Description** Examination of the development of an African American literary genre such as African American poetry, the slave narrative, or the African American novel. Through study of both primary and secondary texts, students will gain an understanding of the historical context in which a specific African American literary genre emerged, as well as become conversant in the critical discussions in which these literary forms are defined and theorized. May be repeated for a maximum of 6 credit hours when topic changes. **PREREQUISITE(S):** ENGL 8805 and ENGL 8809

### **ENGL 7328 - Studies in Major Authors: African American Literature**

**Credit Hours:** (3) **Description** Study of the works of selected writers or cultural figures, as well as examination of the scholarship framing the author's career. May be repeated for a maximum of 9 credit hours when topic changes.

### **ENGL 7329 - African American Literature, Beginnings to 1850**

**Credit Hours:** (3) **Description** Survey of African American literature from the Colonial Period to 1850.

### **ENGL 7330 - Afr-Amer Lit 1850-1900 \*\***

**Credit Hours:** (3) **Description** Survey of African American literature from 1850-1900.

### **ENGL 7332 - Literature of the African Diaspora**

**Credit Hours:** (3) **Description** Examination of literatures of the African diaspora outside of the U.S. May include Anglophone literatures, as well as literatures taught in translation. May be repeated for a maximum of 6 credit hours when topic changes.

### **ENGL 7335 - African American Literature, 1989-Present**

**Credit Hours:** (3) **Description** Survey of African American writing from 1989 to the present, situated in relation to recent developments in theory and other arts as well as contemporary cultural and political contexts.

### **ENGL 7336 - African American Literary Theory**

**Credit Hours:** (3) **Description** Examination of the critical movements in African American Literary Theory from 1900 to present.

### **ENGL 7337 - African-American Literature, 1930-1988**

**Credit Hours:** (3) **Description** Survey of African American literature from 1930-1988

### **ENGL 7338 - Amiri Baraka and the Black Arts Movement**

**Credit Hours:** (3) **Description** Studies in the work of Amiri Baraka and other writers of the Black Arts Movement.

### **ENGL 7339 - Afrofuturism and Black Speculative Fiction**

**Credit Hours:** 3 **Description** This course explores the literary, cultural, and theoretical tradition of black speculative fiction, particularly through genres such as black science fiction and fantasy, horror, and its most popular form, afrofuturism. **PREREQUISITE(S)** or **COREQUISITE(S)**: Must possess a bachelor's degree or be enrolled in an accelerated bachelor's/master's program.

### **ENGL 7350 - Rhetorical Theory**

**Credit Hours:** (3) *Cross listing* (Same as COMM 7350-COMM 8350) **Description** (Same as COMM 7350-8350). History of rhetoric from the sophists through the present; includes readings from Isocrates, Plato, Aristotle, Cicero, Augustine, Erasmus, Ramus, Campbell, Blair, John Q. Adams, and others.

### **ENGL 7371 - Rhetorical Criticism**

**Credit Hours:** (3) *Cross listing* (Same as COMM 7371-COMM 8371) **Description** (Same as COMM 7371-8371). Examines principal modes of contemporary rhetorical analysis. May be repeated for a maximum of 9 credit hours.

### **ENGL 7391 - Modern American Novel**

**Credit Hours:** (3) **Description** Intensive study of American novels.

### **ENGL 7392 - American Poetry**

**Credit Hours:** (3) **Description** Intensive study of American poetry.

### **ENGL 7393 - American Drama**

**Credit Hours:** (3) **Description** Intensive study of American drama.

### **ENGL 7394 - Modern American Lit**

**Credit Hours:** (3) **Description** Advanced study of American literature produced between 1900 and 1950.

### **ENGL 7395 - Am Literary Movements**

**Credit Hours:** (3) **Description** Advanced study of a specific American literary movement, such as the Southern Agrarian Movement, the Beat Generation, or American Transcendentalism. May be repeated for a maximum of 6 credit hours with change in course content.

### **ENGL 7398 - Cultural Contexts of Am Lit**

**Credit Hours:** (3) **Description** Study of cultural contexts of key texts of American literature, including discussions of how such texts connect to political and social histories or concepts. May be repeated for a maximum of 6 credit hours with change in course content.

### **ENGL 7399 - Multi-Cultural Am Lit**

**Credit Hours:** (3) **Description** Advanced study of multi-ethnic American literatures, including readings by writers focusing on the experiences of Asian Americans, Hispanic Americans, and Native Americans. May be repeated for a maximum of 6 credit hours with change in course content.

### **ENGL 7441 - Studies in European Drama/Lit**

**Credit Hours:** (3) **Description** Movements and writers important to development of Continental Europe in the late eighteenth century to present. May be repeated for a maximum of 6 credit hours when topic changes.

### **ENGL 7451 - Women And Literature**

**Credit Hours:** (3) **Description** Literature and criticism by and about women. May be repeated for a maximum of 9 credit hours when topics change.

### **ENGL 7460 - Pop Lit Traditions**

**Credit Hours:** (3) **Description** Examination of issues (e.g. gender, nationalism, punishment) as they are represented in the texts of high and low culture, emphasizing how such representation challenges the distinction between high and low culture. May be repeated for a maximum of 6 credit hours when topic changes. **PREREQUISITE(S)**: Permission of instructor.

### **ENGL 7462 - Cont British/Cmwlth Lit**

**Credit Hours:** (3) **Description** Authors, works, genres, and literary styles in development of contemporary British and

Commonwealth literatures. May be repeated for a maximum of 6 credit hours when topic changes. May be repeated for a maximum of 9 credit hours when topics change. Grades of S, U, or IP will be given.

### **ENGL 7464 - Contemporary American Literature**

**Credit Hours:** (3) **Description** Authors, works, genres, and literary styles in development of contemporary American literature. May be repeated for a maximum of 9 credit hours when topics change.

### **ENGL 7466 - World Lit in Translation**

**Credit Hours:** (3) **Description** Contemporary non-English fiction in translation, primarily from non-Western European cultures; focus on major movements and writers.

### **ENGL 7468 - Literature of the Harlem Renaissance \*\***

**Credit Hours:** (3) **Description** Examination of poetry, prose, and drama from the period known as the Harlem Renaissance" within the context of space

### **ENGL 7469 - African American Women Writers \*\***

**Credit Hours:** (3) **Description** Examines the variety of ways black women writers have reclaimed the creative power of agency, emphasizing areas of difference as well as continuity within the African American literary tradition; combines considerations of context, both historical and political, with rigorous textual and theoretical analyses. May be repeated for a maximum of 9 credit hours when topic changes.

### **ENGL 7470 - Forms Creative Nonfict**

**Credit Hours:** (3) **Description** Creative nonfiction with attention to historical roots and contemporary theory and practice. May be repeated up to 6 hours with change of topic/course content and approval of Program Coordinator.

### **ENGL 7471 - Forms Of Fiction**

**Credit Hours:** (3) **Description** A study of how fiction works through analyzing the short story, the novella, and the novel with attention to historical developments. May be repeated up

to 6 hours with change of topic/course content and approval of Program Coordinator.

### **ENGL 7472 - Forms Of Poetry**

**Credit Hours:** (3) **Description** A study of meters, forms, and types of poetry in English with attention to the principal traditions and critical ideas associated with the writing of verse in English. May be repeated up to 6 hours with change of topic/course content and approval of Program Coordinator. Grades of S, U, or IP will be given.

### **ENGL 7473 - Verbal/Visual Texts**

**Credit Hours:** (3) **Description** Study of intersection of the verbal and the visual in illuminated manuscripts, graphic novels, children's books, illustrated books, video games, websites, and other sites. Depending upon the instructor's choice, one or more of these genres and works of every period will be studied. May be repeated up to 6 hours with change of topic.

### **ENGL 7475 - Literary Publishing**

**Credit Hours:** (3) **Description** Development of skills involved in editing, producing, and marketing a literary magazine; further training in the skills of publishing the student's own literary texts. May be repeated for a maximum of 6 credit hours with change in course content. May be repeated for a maximum of 9 credit hours. Grades of S, U, or IP will be given.

### **ENGL 7480 - Cultural Texts and Theories**

**Credit Hours:** (3) **Description** Advanced social, political, and cultural theories that structure the understanding of cultural texts. May be repeated for a maximum of 6 credit hours.

### **ENGL 7485 - Lit Arts Programming**

**Credit Hours:** (3) **Description** Development of skills involved in planning and administering community arts events and organizations; further training in the skills of author interviewing and book reviewing. May be repeated for a maximum of 6 credit hours.

### **ENGL 7501 - History English Lang \*\***

**Credit Hours:** (3) **Description** Development of English from a minor Germanic dialect to a major international language.

### **ENGL 7507 - Empirical Mthds Ling Rsrch**

**Credit Hours:** (3) **Description** Develop research questions and hypotheses, prepare language surveys, use linguistic databases, perform qualitative and quantitative analysis of linguistic data, use computational tools, and prepare findings for presentation, and publication of research on the study of language use.

### **ENGL 7508 - Corpus Linguistics**

**Credit Hours:** (3) **Description** History, design, creation, interpretation, and applications of corpora in applied language research.

### **ENGL 7509 - African American Linguistics**

**Credit Hours:** (3) **Description** Study of African American Vernacular English, including historical development, linguistic features, correlation with ethnic identity, fictional representation, contributions to General American English, and controversies concerning use in schools.

### **ENGL 7510 - Gender and Language**

**Credit Hours:** (3) **Description** Study of gender as a variable as it intersects with language use in a variety of contexts, including professional, legal, medical, and classroom settings.

### **ENGL 7511 - Survey of Linguistics \*\***

**Credit Hours:** (3) **Description** Introduction to the nature of language with emphasis on basic principles of English phonology, morphology, and syntax; emphasis on collecting and analyzing linguistic data for research purposes.

### **ENGL 7512 - Morphology and Syntax**

**Credit Hours:** (3) **Description** Study of English language structures emphasizing how form and meaning are integrally related.

### **ENGL 7514 - Sociolinguistics \*\***

**Credit Hours:** (3) **Description** Language use in relation to social interaction and power structures; dialects and varieties of English; inequality in varied environments; appraisal of methodologies used in gathering and analyzing data.

### **ENGL 7515 - Language & Literature \*\***

**Credit Hours:** (3) **Description** Application of linguistic theory to analysis of literature, nature of literary language, and linguistic options open to writers.

### **ENGL 7516 - Phonetics & Phonology**

**Credit Hours:** (3) **Description** Articulatory and linguistic phonetics, phonetic transcription, suprasegmental phonology, overview of English phonology, and information on teaching English pronunciation to speakers of other languages. Grades of S, U, or IP will be given.

### **ENGL 7517 - Discourse Analysis**

**Credit Hours:** (3) **Description** Examination of the tools and methods used by various subdisciplines of English (linguistics, rhetoric, and literature) to analyze forms of discourse, including legal, medical, scientific, technical, business, literary, academic, and oral texts.

### **ENGL 7530 - Field Experience and Practicum in ESL \*\***

**Credit Hours:** (3-6) **Description** Experience in observing and teaching, peer teaching, and work with an English as a Second Language (ESL) specialist. Grades of S, U, or IP will be given. May be repeated for a maximum of 6 credit hours when topic changes.

### **ENGL 7531 - Theory and History of ESL \*\***

**Credit Hours:** (3) **Description** Survey of relation of linguistic principles to second language acquisition.

### **ENGL 7532 - Principles of Skills Assessment \*\***

**Credit Hours:** (3) **Description** Application of theories of teaching second language skills with emphasis on testing in a second language.

### **ENGL 7533 - Methods/Techniques of ESL in K-12 \*\***

**Credit Hours:** (3) **Description** Techniques and resources for working with children and adolescents for whom English is a second language. May be repeated for a maximum of 6 credit hours when topic changes.

### **ENGL 7534 - Second Lang Acquisition**

**Credit Hours:** (3) **Description** Theories of second language acquisition, development of second language proficiency, and research in bilingualism. May be repeated for a maximum of 9 credit hours when topic changes.

### **ENGL 7535 - ESL Grammar \*\***

**Credit Hours:** (3) **Description** Grammatical systems and strategies of Modern English; analysis of English structures that tend to cause difficulty for ESL/SESD speakers.

### **ENGL 7536 - Issues in Second Language Writing \*\***

**Credit Hours:** (3) **Description** Emphasis on research in second language writing, especially the role of psychological, social, and cultural influences on learning to write in a second language. May be repeated for a maximum of 6 credit hours when topic changes. Grades of S, U, or IP will be given.

### **ENGL 7537 - Issues in Second Language Reading \*\***

**Credit Hours:** (3) **Description** Emphasis on how non-native speakers of English learn to read in English, the effect of context and culture on L2 reading, and culturally related responses to reading and literacy traditions. May be repeated for a maximum of 9 credit hours when topic changes.

### **ENGL 7538 - Cultural Issues in ESL \*\***

**Credit Hours:** (3) **Description** Impact of culture on non-English language background speakers as well as the particular aspects of U.S. culture and traditions needed for successful acculturation.

### **ENGL 7590 - Appl/Theory Linguistics**

**Credit Hours:** (3) **Description** Intensive study of specialized areas in English linguistics. Maybe repeated up to 9 hours with change of topic.

### **ENGL 7601 - Creative Nonfiction Wkshp**

**Credit Hours:** (3) **Description** Emphasis on examination and discussion of creative nonfiction written by students. May be repeated 10 times for a maximum of 30 credit hours. May be repeated for a maximum of 6 credit hours when topic changes. Grades of A-F, or IP will be given.

### **ENGL 7602 - Fiction Workshop**

**Credit Hours:** (3) **Description** Emphasis on the examination and the discussion of fiction written by students. May be repeated 10 times for a maximum of 30 credit hours.

**PREREQUISITE(S):** permission of instructor. Grades of S, U, or IP will be given.

### **ENGL 7603 - Poetry Workshop**

**Credit Hours:** (3) **Description** Emphasis on the examination and the discussion of poetry written by students. Grades of A-F, or IP will be given.

### **ENGL 7604 - Creative Writing Wkshp**

**Credit Hours:** (3) **Description** Emphasis on examination and discussion of fiction, poetry, or creative nonfiction written by students.

### **ENGL 7605 - Adv Grad Fiction Wkshp**

**Credit Hours:** (3) **Description** Designed for candidates in MFA program in Creative Writing who have shown particular excellence in ENGL 7602. May be repeated 10 times for a maximum of 30 credit hours. May be repeated for a maximum of 9 credit hours.

### **ENGL 7606 - Adv Creative Non-Fict Wkshp**

**Credit Hours:** (3) **Description** Designed for candidates in MFA program in Creative Writing who have shown particular excellence in ENGL 7601. May be repeated for a maximum of 9 credit hours.

### **ENGL 7607 - Advanced Poetry Workshop**

**Credit Hours:** (3) **Description** Designed for candidates in MFA program in Creative Writing who have shown particular excellence in ENGL 7603. May be repeated for a maximum of 9 credit hours.

### **ENGL 7701 - Hist Crit Theory**

**Credit Hours:** (3) **Description** History of literary criticism and theory, classical to modern.

### **ENGL 7702 - Contemp Crit Theory**



**Credit Hours:** (3) **Description** Examination of major movements in contemporary literary criticism and theory. May be repeated for a maximum of 6 credit hours with change in course content.

### **ENGL 7801 - History Composition**

**Credit Hours:** (3) **Description** Focuses on history of composition as a discipline of its own; examines rise of teaching of composition from 18th century Scottish universities to the present and/or history of development of theoretical approaches toward teaching composition. May be repeated for a maximum of 6 credit hours with change in course content.

### **ENGL 7804 - Af Am Issues in Composition**

**Credit Hours:** (3) **Description** Focuses on current scholarship and research that address the marginalized voices of race in the teaching of composition. Closely examines the theories and research of this issue, and studies pedagogical strategies. May be repeated for a maximum of 6 credit hours with change in course content.

### **ENGL 7805 - Foundations of Writing Studies**

**Credit Hours:** (3) **Description** A multidisciplinary exploration of the purposes, technologies, and contexts for written communication.

### **ENGL 7806 - Resch Meth In Writing**

**Credit Hours:** (3) **Description** Bibliographic techniques and an introduction to empirical methodologies for the study of the writing process and the testing of written documents. May be repeated for a maximum of 6 credit hours when topic changes.

### **ENGL 7807 - Wksp/Govmt & Corp Wrtg \*\***

**Credit Hours:** (3) **Description** Textual and contextual analysis of the kinds of writing produced most often in government, law, and business; practice in writing correspondence reports, briefs, manuals, and proposals. Grades of S, U, or IP will be given.

### **ENGL 7808 - Wksp/Sci & Techn Wrtg \*\***

**Credit Hours:** (3) **Description** Textual and contextual analysis of the kinds of writing produced most often in

industry and the academic research community; practice in writing documents such as technical proposals, reports, computer documentation, and papers for publication. May be repeated for a maximum of 6 credit hours when topic changes. **6 PREREQUISITE(S):** FIR 3410 and FIR 3720. Grades of S, U, or IP will be given.

### **ENGL 7809 - Technical Editing \*\***

**Credit Hours:** (3) **Description** Current practices in editing and publication in the field of technical communication; topics include copy-editing, substantive editing, author-editor relations, and the production practice. May be repeated for a maximum of 6 credit hours when topic changes. 6

### **ENGL 7811 - Internship Prof Wrtng**

**Credit Hours:** (3) **Description** Assigned on the basis of qualifications and availability, student does a semester's work in technical, scientific, legal, government, or business writing and provides an extensive report and analysis. **NOTE:** Students who are on academic probation will not be allowed to register for this course. **NOTE:** Students who are on academic probation will not be allowed to register for this course. Grades of S, U, or IP will be given.

### **ENGL 7812 - Mphs Urban Wrtng Ins I**

**Credit Hours:** (3) *Cross listing* (Same as ICL 7304-8304) **Description** (Same as ICL 7304-8304). Intensive study of writing research, current writing practices, and issues and trends related to K-12 writing instruction. English majors may not use this course to fulfill degree requirements.

### **ENGL 7813 - Mphs Urban Wrtng Ins II**

**Credit Hours:** (3) *Cross listing* (Same as ICL 7305-8305) **Description** (Same as ICL 7305-8305). Prepares K-12 teachers to improve their own writing practices and assume a leadership role in writing instruction in their schools. English majors may not use this course to fulfill degree requirements.

### **ENGL 7815 - Sem History Rhetoric**

**Credit Hours:** (3) **Description** Examines different periods and issues of rhetorical history each semester. One semester will consider Greek rhetoric (beginnings through the New Testament); another will consider Latin rhetoric (Cicero through the Renaissance); a third will cover Scottish, British, and American rhetoric. May be repeated for a maximum of 9

credit hours when topic changes. May be repeated for a maximum of 9 credit hours when topic changes.

### **ENGL 7818 - Collaborative Writing \*\***

**Credit Hours:** (3) **Description** Theoretical and research-based focus on managing and developing collaborative writing projects and processes. May be repeated up to 6 hours with change of topic/course content and approval of Program Coordinator.

### **ENGL 7819 - Rhetoric Of Science**

**Credit Hours:** (3) *Cross listing* (Same as COMM 7819-COMM 8819) **Description** (Same as COMM 7819-8819). This course examines scientific and technical communication from rhetorical perspective, showing how scientific knowledge is shaped not only by data and method, but also by persuasive purposes and sociocultural forces. May be repeated up to 6 hours with change of topic.

### **ENGL 7820 - Topics In Rhetoric**

**Credit Hours:** (3) *Cross listing* (Same as COMM 7820-COMM 8820) **Description** (Same as COMM 7820-8820). Topical seminar devoted to an important aspect of the history, theory, or criticism of rhetoric. May be repeated for a maximum of 9 credit hours when topics change. May be repeated for a maximum of 6 credit hours with change in course content

### **ENGL 7822 - Cont Comp Theory**

**Credit Hours:** (3) **Description** Examines relationship between rhetorical and composition theory and contemporary philosophy, especially poststructuralism, neo-pragmatism, and hermeneutics. May be repeated for a maximum of 6 credit hours.

### **ENGL 7823 - Topics In Composition**

**Credit Hours:** (3) **Description** Topics can include invention, the writing process, writing assessment, style, and writing program administration. May be repeated for a maximum of 9 credit hours when topics change. May be repeated for a maximum of 6 credit hours

### **ENGL 7890 - Topic/Technical Writing**

**Credit Hours:** (3) **Description** Intensive study of specialized areas in technical writing. May be repeated for a maximum of 9 credit hours when topics change.

### **ENGL 7900 - Creative Writing Colloquium**

**Credit Hours:** (3) **Description** A course in the preparation for the MFA thesis and the MFA comprehensive exam. NOTE: May be repeated for a maximum of 6 credit hours, but only three hours with any one professor may be applied toward the degree; recommended to be taken in the last semester of regular course work and first semester of thesis work.

### **ENGL 7996 - Thesis**

**Credit Hours:** (1-6) **Description** A prospectus for the thesis must be approved by the student's advisor and the department chair before the student registers for this course. The completed thesis must be approved by at least two readers. NOTE: Students in Professional Writing must pass their comprehensive examination before registering for thesis hours and have the option of writing or producing a project or portfolio. Grades of S, U, or IP will be given.

### **ENGL 7997 - Portfolio**

**Credit Hours:** (1-3) **Description** A course for MA students in Professional Writing or Composition Studies who choose to produce a project or portfolio instead of a thesis.

### **ENGL 8000 - Literary Research**

**Credit Hours:** (3) **Description** Various approaches to literary scholarship and research methodology; introduction to professional standards, bibliographical methods, and procedures of scholarship and criticism. NOTE: This course is required for Literature majors and should be taken in the first year of graduate study.

### **ENGL 8001 - Acad Genre and Sch Pub**

**Credit Hours:** (3) **Description** Study and application of interpretive strategies to texts pertinent to professional writing and composition studies.

### **ENGL 8002 - Reading for Comps**

**Credit Hours:** (3) **Description** Intensive independent preparation for PhD Comprehensive Exams. Course is designed and supervised by the Chair of the student's Comprehensive Exams Committee NOTE: plan of study for

course must be approved by Department Director of Graduate Studies.

### **ENGL 8003 - Thry/Prac Tchng Comp**

**Credit Hours:** (3) **Description** Designed for graduate assistants teaching English 1010. Emphasis on the ways and techniques of teaching rudiments of English composition on college level. Each graduate teaching assistant in the Department of English must enroll in English 7003-8003 before or concurrent with first teaching assignment.

### **ENGL 8008 - Thry/Prac Tchng Online \*\***

**Credit Hours:** (3) **Description** Studying the pedagogy of online teaching and preparing for teaching online. Students are required to complete the course to qualify for teaching online for the Department of English.

### **ENGL 8010 - Writ./Comm Cent. Theory/Meth**

**Credit Hours:** (3) *Cross listing* COMM 8010. **Description** Study of writing and communication center theory and methodology. Prepares graduate students for professional work as writing and communication center consultants and administrators.

### **ENGL 8012 - Seminar Health Comm \*\***

**Credit Hours:** (3) *Cross listing* (same as COMM 7012-COMM 8012). **Description** Examines current issues in health communication research, including patient-provider relationships, new technologies and health promotion, and health organizations.

### **ENGL 8013 - Wkshp Hlth Care Writing \*\***

**Credit Hours:** (3) **Description** Textual and contextual analysis of the kinds of writing produced for expert audiences in the healthcare industry and the academic research community; practice in writing documents such as technical proposals, clinical research reports, FDA documentation, and papers for publication.

### **ENGL 8014 - Wkshp Public Hlth Care Writing**

**Credit Hours:** (3) **Description** Theoretical understanding and skill-based practice in communicating healthcare information

(patient education materials, public health care information, patient instructions) to a generally non-expert audience; rhetorical and analytical tools for shaping the information; practical skills for managing group projects and processes; and the opportunity to develop them in a workshop setting.

### **ENGL 8020-8049 - Special Topics in English**

**Credit Hours:** (3)

### **ENGL 8100 - Independent Study**

**Credit Hours:** (1-3) **Description** Focuses on a selected topic dealing with language study or a literary form, theme, figure, or movement. Topic chosen by student and approved by student's advisor and Department Chair. Can be used only as an elective. Grades of A-F, or IP will be given.

### **ENGL 8211 - Medieval Literature**

**Credit Hours:** (3) **Description** Studies of selected literary texts from the Middle Ages. **PREREQUISITE(S):** 3.00 overall GPA and completed 15 hours of coursework.

### **ENGL 8230 - Chaucer**

**Credit Hours:** (3) **Description** Studies of works by Geoffrey Chaucer in Middle English.

### **ENGL 8242 - English Renaissance Li**

**Credit Hours:** (3) **Description** Survey of the major works of the Renaissance.

### **ENGL 8254 - English Lit 17c**

**Credit Hours:** (3) **Description** Study of the poetry and prose of seventeenth-century England.

### **ENGL 8255 - Shakespeare**

**Credit Hours:** (3) **Description** Study of the language, contexts, and themes of Shakespeare's drama and poetry. May be repeated for a maximum of 6 credit hours when topic changes.

### **ENGL 8256 - Milton**

**Credit Hours:** (3) **Description** Study of Milton's poetry.

### **ENGL 8264 - 18th-Century British Lit**

**Credit Hours:** (3) **Description** Study of drama, fiction, poetry, and essays from Restoration and eighteenth-century Britain.

### **ENGL 8276 - English Lit Romantic**

**Credit Hours:** (3) **Description** Exploration of major authors, themes, and/or movements in British Romantic literature.

### **ENGL 8278 - Victorian Literature**

**Credit Hours:** (3) **Description** Study of one or more aspects of poetry, prose, fiction or drama of the Victorian period and the historical and social circumstances in which they were produced.

### **ENGL 8281 - Stud Early Am Lit**

**Credit Hours:** (3) **Description** Studies in selected topics in American Literature from European-American contact until 1800. May be repeated for a maximum of 6 credit hours when topic changes.

### **ENGL 8292 - Modern British Poetry**

**Credit Hours:** (3) **Description** Study of important British and UK poetry written from 1890 to the present. May be repeated 10 times for a maximum of 30 credit hours

### **ENGL 8293 - Modern British Drama**

**Credit Hours:** (3) **Description** Study of British drama from Oscar Wilde to the present. May be repeated for a maximum of 9 credit hours

### **ENGL 8294 - Stud 19th-C Am Lit**

**Credit Hours:** (3) **Description** Studies in selected topics in American Literature from 1800-1900. May be repeated for a maximum of 6 credit hours when topic changes. May be repeated for a maximum of 9 credit hours

### **ENGL 8296 - Stud British Novel**

**Credit Hours:** (3) **Description** Studies in selected periods or topics in the British novel. May be repeated for a maximum of 9 credit hours when topic changes.

### **ENGL 8326 - A A Lit/Memphis/M South**

**Credit Hours:** (3) **Description** Focuses on the rise of African American literature from the cultural matrix that became Memphis, a gathering point and crossroads for African American writers of all genres from 1867 Reconstructionist writings to the present southern Hip Hop Writers movement.

### **ENGL 8327 - Form/Genre:Afr-Amer Lit**

**Credit Hours:** (3) **Description** Examination of the development of an African American literary genre such as African American poetry, the slave narrative, or the African American novel. Through study of both primary and secondary texts, students will gain an understanding of the historical context in which a specific African American literary genre emerged, as well as become conversant in the critical discussions in which these literary forms are defined and theorized. May be repeated for a maximum of 6 credit hours when topic changes.

### **ENGL 8328 - Maj Authors:Afr-Amer Lit**

**Credit Hours:** (3) **Description** Study of the works of selected writers or cultural figures, as well as examination of the scholarship framing the author's career. May be repeated for a maximum of 9 credit hours when topic changes.

### **ENGL 8329 - Afr-Amer Lit/Beg to 1850**

**Credit Hours:** (3) **Description** Survey of African American literature from the Colonial Period to 1850.

### **ENGL 8330 - Afr-Amer Lit 1850-1900 \*\***

**Credit Hours:** (3) **Description** Survey of African American literature from 1850-1900.

### **ENGL 8332 - Lit of the African Diaspora**

**Credit Hours:** (3) **Description** Examination of literatures of the African diaspora outside of the U.S. May include Anglophone literatures, as well as literatures taught in translation. May be repeated for a maximum of 6 credit hours when topic changes.

**ENGL 8335 - Afr-Amer Lit 1989 to Present**

**Credit Hours:** (3) **Description** Survey of African American writing from 1989 to the present, situated in relation to recent developments in theory and other arts as well as contemporary cultural and political contexts.

**ENGL 8336 - Afr-Amer Literary Theory**

**Credit Hours:** (3) **Description** Examination of the critical movements in African American Literary Theory from 1900 to present.

**ENGL 8337 - Afr-Amer Lit, 1930-1988**

**Credit Hours:** (3) **Description** Survey of African American literature from 1930-1988

**ENGL 8338 - Baraka and Black Arts**

**Credit Hours:** (3) **Description** Studies in the work of Amiri Baraka and other writers of the Black Arts Movement.

**ENGL 8339 - Afrofuturism and Black Speculative Fiction**

**Credit Hours:** 3 **Description** This course explores the literary, cultural, and theoretical tradition of black speculative fiction, particularly through genres such as black science fiction and fantasy, horror, and its most popular form, afrofuturism. **PREREQUISITE(S)** or **COREQUISITE(S)**: Must possess a bachelor's degree or be enrolled in an accelerated bachelor's/master's program.

**ENGL 8350 - Rhetorical Theory**

**Credit Hours:** (3) *Cross listing* (Same as COMM 7350-COMM 8350) **Description** (Same as COMM 7350-8350). History of rhetoric from the sophists through the present; includes readings from Isocrates, Plato, Aristotle, Cicero, Augustine, Erasmus, Ramus, Campbell, Blair, John Q. Adams, and others. **PREREQUISITE(S)**: Successful completion of proficiency examination.

**ENGL 8371 - Rhetorical Criticism**

**Credit Hours:** (3) *Cross listing* (Same as COMM 7371-COMM 8371) **Description** (Same as COMM 7371-8371). Examines principal modes of contemporary rhetorical analysis. May be repeated for a maximum of 9 credit hours.

**ENGL 8391 - American Novel**

**Credit Hours:** (3) **Description** Intensive study of American novels.

**ENGL 8392 - American Poetry**

**Credit Hours:** (3) **Description** Intensive study of American poetry.

**ENGL 8393 - American Drama**

**Credit Hours:** (3) **Description** Intensive study of American drama. May be repeated for a maximum of 9 credit hours when topic changes.

**ENGL 8394 - Modern American Lit**

**Credit Hours:** (3) **Description** Advanced study of American literature produced between 1900 and 1950.

**ENGL 8395 - Am Literary Movements**

**Credit Hours:** (3) **Description** Advanced study of a specific American literary movement, such as the Southern Agrarian Movement, the Beat Generation, or American Transcendentalism. May be repeated for a maximum of 6 credit hours with change in course content.

**ENGL 8398 - Cultural Contexts of Am Lit**

**Credit Hours:** (3) **Description** Study of cultural contexts of key texts of American literature, including discussions of how such texts connect to political and social histories or concepts. May be repeated for a maximum of 6 credit hours with change in course content.

**ENGL 8399 - Multi-Cultural Am Lit**

**Credit Hours:** (3) **Description** Advanced study of multi-ethnic American literatures, including readings by writers focusing on the experiences of Asian Americans, Hispanic Americans, and Native Americans. May be repeated for a maximum of 6 credit hours with change in course content.

**ENGL 8441 - Studies in European Drama/Lit**

**Credit Hours:** (3) **Description** Movements and writers important to development of Continental Europe in the late eighteenth century to present. May be repeated for a maximum of 6 credit hours when topic changes.

### **ENGL 8451 - Women And Literature**

**Credit Hours:** (3) **Description** Literature and criticism by and about women. May be repeated for a maximum of 9 credit hours when topics change.

### **ENGL 8460 - Pop Lit Traditions**

**Credit Hours:** (3) **Description** Examination of issues (e.g. gender, nationalism, punishment) as they are represented in the texts of high and low culture, emphasizing how such representation challenges the distinction between high and low culture. May be repeated for a maximum of 6 credit hours when topic changes. May be repeated for a maximum of 9 credit hours when topics change. **PREREQUISITE(S):** Successful completion of proficiency examination.

### **ENGL 8462 - Cont British/Cmwlth Lit**

**Credit Hours:** (3) **Description** Authors, works, genres, and literary styles in development of contemporary British and Commonwealth literatures. May be repeated for a maximum of 6 credit hours when topic changes.

### **ENGL 8464 - Contmp American Lit**

**Credit Hours:** (3) **Description** Authors, works, genres, and literary styles in development of contemporary American literature.

### **ENGL 8466 - World Lit in Translation**

**Credit Hours:** (3) **Description** Contemporary non-English fiction in translation, primarily from non-Western European cultures; focus on major movements and writers. May be repeated with change in topic and content. Topics are varied and in online class listings.

### **ENGL 8468 - Lit Harlem Renaissance \*\***

**Credit Hours:** (3) **Description** Examination of poetry, prose, and drama from the period known as the Harlem Renaissance" within the context of space May be repeated with a change in topic. See online class listings for topic.

### **ENGL 8469 - Af Amer Women Writers \*\***

**Credit Hours:** (3) **Description** Examines the variety of ways black women writers have reclaimed the creative power of agency, emphasizing areas of difference as well as continuity within the African American literary tradition; combines considerations of context, both historical and political, with rigorous textual and theoretical analyses. May be repeated for a maximum of 9 credit hours when topic changes.

### **ENGL 8470 - Forms Creative Nonfict**

**Credit Hours:** (3) **Description** Creative nonfiction with attention to historical roots and contemporary theory and practice. May be repeated up to 6 hours with change of topic/course content and approval of Program Coordinator.

### **ENGL 8471 - Forms Of Fiction**

**Credit Hours:** (3) **Description** A study of how fiction works through analyzing the short story, the novella, and the novel with attention to historical developments. May be repeated up to 6 hours with change of topic/course content and approval of Program Coordinator.

### **ENGL 8472 - Forms Of Poetry**

**Credit Hours:** (3) **Description** A study of meters, forms, and types of poetry in English with attention to the principal traditions and critical ideas associated with the writing of verse in English. May be repeated up to 6 hours with change of topic/course content and approval of Program Coordinator.

### **ENGL 8473 - Verbal/Visual Texts**

**Credit Hours:** (3) **Description** Study of intersection of the verbal and the visual in illuminated manuscripts, graphic novels, children's books, illustrated books, video games, websites, and other sites. Depending upon the instructor's choice, one or more of these genres and works of every period will be studied. May be repeated up to 6 hours with change of topic.

### **ENGL 8475 - Literary Publishing**

**Credit Hours:** (3) **Description** Development of skills involved in editing, producing, and marketing a literary magazine; further training in the skills of publishing the student's own literary texts. May be repeated for a maximum of 6 credit hours with change in course content.

### **ENGL 8480 - Cultural Texts and Theories**

**Credit Hours:** (3) **Description** Advanced social, political, and cultural theories that structure the understanding of cultural texts. May be repeated for a maximum of 6 credit hours.

### **ENGL 8485 - Lit Arts Programming**

**Credit Hours:** (3) **Description** Development of skills involved in planning and administering community arts events and organizations; further training in the skills of author interviewing and book reviewing. May be repeated for a maximum of 6 credit hours. May be repeated for a maximum of 9 credit hours

### **ENGL 8501 - History English Lang \*\***

**Credit Hours:** (3) **Description** Development of English from a minor Germanic dialect to a major international language. May be repeated for maximum of 3 credits

### **ENGL 8507 - Empirical Mthds Ling Rsrch**

**Credit Hours:** (3) **Description** Develop research questions and hypotheses, prepare language surveys, use linguistic databases, perform qualitative and quantitative analysis of linguistic data, use computational tools, and prepare findings for presentation, and publication of research on the study of language use.

### **ENGL 8508 - Corpus Linguistics**

**Credit Hours:** (3) **Description** History, design, creation, interpretation, and applications of corpora in applied language research.

### **ENGL 8509 - African American Linguistics**

**Credit Hours:** (3) **Description** Study of African American Vernacular English, including historical development, linguistic features, correlation with ethnic identity, fictional representation, contributions to General American English, and controversies concerning use in schools.

### **ENGL 8510 - Gender and Language**

**Credit Hours:** (3) **Description** Study of gender as a variable as it intersects with language use in a variety of contexts, including professional, legal, medical, and classroom settings.

### **ENGL 8511 - Survey of Linguistics**

**Credit Hours:** (3) **Description** Introduction to the nature of language with emphasis on basic principles of English phonology, morphology, and syntax; emphasis on collecting and analyzing linguistic data for research purposes.

**PREREQUISITE(S):** Permission of graduate coordinator

### **ENGL 8512 - Morphology and Syntax**

**Credit Hours:** (3) **Description** Study of English language structures emphasizing how form and meaning are integrally related.

### **ENGL 8514 - Sociolinguistics \*\***

**Credit Hours:** (3) **Description** Language use in relation to social interaction and power structures; dialects and varieties of English; inequality in varied environments; appraisal of methodologies used in gathering and analyzing data.

**PREREQUISITE(S):** Permission of instructor.

### **ENGL 8515 - Language & Literature \*\***

**Credit Hours:** (3) **Description** Application of linguistic theory to analysis of literature, nature of literary language, and linguistic options open to writers.

### **ENGL 8516 - Phonetics & Phonology**

**Credit Hours:** (3) **Description** Articulatory and linguistic phonetics, phonetic transcription, suprasegmental phonology, overview of English phonology, and information on teaching English pronunciation to speakers of other languages.

### **ENGL 8517 - Discourse Analysis**

**Credit Hours:** (3) **Description** Examination of the tools and methods used by various subdisciplines of English (linguistics, rhetoric, and literature) to analyze forms of discourse, including legal, medical, scientific, technical, business, literary, academic, and oral texts.

### **ENGL 8530 - Fld Exp/Pract In ESL \*\***

**Credit Hours:** (3-6) **Description** Experience in observing and teaching, peer teaching, and work with an English as a Second Language (ESL) specialist. Grades of S, U, or IP will be given.

**ENGL 8531 - Theory/History ESL \*\***

**Credit Hours:** (3) **Description** Survey of relation of linguistic principles to second language acquisition.

**ENGL 8532 - Theor Skill Assess ESL \*\***

**Credit Hours:** (3) **Description** Application of theories of teaching second language skills with emphasis on testing in a second language.

**ENGL 8533 - Meth/Tech ESL In K-12 \*\***

**Credit Hours:** (3) **Description** Techniques and resources for working with children and adolescents for whom English is a second language.

**ENGL 8534 - Second Lang Acquisition**

**Credit Hours:** (3) **Description** Theories of second language acquisition, development of second language proficiency, and research in bilingualism.

**ENGL 8535 - ESL Grammar \*\***

**Credit Hours:** (3) **Description** Grammatical systems and strategies of Modern English; analysis of English structures that tend to cause difficulty for ESL/SESD speakers.

**ENGL 8536 - Second Language Writing \*\***

**Credit Hours:** (3) **Description** Emphasis on research in second language writing, especially the role of psychological, social, and cultural influences on learning to write in a second language.

**ENGL 8537 - Second Language Reading \*\***

**Credit Hours:** (3) **Description** Emphasis on how non-native speakers of English learn to read in English, the effect of context and culture on L2 reading, and culturally related responses to reading and literacy traditions. May be repeated as often as desired, but only 9 credit hours count toward the degree

**ENGL 8538 - Cultural Issues ESL \*\***

**Credit Hours:** (3) **Description** Impact of culture on non-English language background speakers as well as the

particular aspects of U.S. culture and traditions needed for successful acculturation.

**ENGL 8590 - Appl/Theory Linguistics**

**Credit Hours:** (3) **Description** Intensive study of specialized areas in English linguistics. Maybe repeated up to 9 hours with change of topic. May be repeated for a maximum of 9 credit hours

**ENGL 8601 - Creative Nonfiction Wkshp**

**Credit Hours:** (3) **Description** Emphasis on examination and discussion of creative nonfiction written by students. May be repeated 10 times for a maximum of 30 credit hours. May be repeated for maximum of 3 credits

**ENGL 8602 - Fiction Workshop**

**Credit Hours:** (3) **Description** Emphasis on the examination and the discussion of fiction written by students. May be repeated 10 times for a maximum of 30 credit hours.

**ENGL 8603 - Poetry Workshop**

**Credit Hours:** (3) **Description** Emphasis on the examination and the discussion of poetry written by students. May be repeated 10 times for a maximum of 30 credit hours.

**ENGL 8606 - Adv Creative Non-Fict Wkshp**

**Credit Hours:** (3) **Description** Designed for candidates in MFA program in Creative Writing who have shown particular excellence in ENGL 7601. May be repeated for a maximum of 9 credit hours.

**ENGL 8607 - Advanced Poetry Workshop**

**Credit Hours:** (3) **Description** Designed for candidates in MFA program in Creative Writing who have shown particular excellence in ENGL 7603. May be repeated for a maximum of 9 credit hours.

**ENGL 8701 - Hist Crit Theory**

**Credit Hours:** (3) **Description** History of literary criticism and theory, classical to modern.

**ENGL 8702 - Contemp Crit Theory**



**Credit Hours:** (3) **Description** Examination of major movements in contemporary literary criticism and theory.

### **ENGL 8801 - History Composition**

**Credit Hours:** (3) **Description** Focuses on history of composition as a discipline of its own; examines rise of teaching of composition from 18th century Scottish universities to the present and/or history of development of theoretical approaches toward teaching composition.

### **ENGL 8804 - Af Am Issues in Composition**

**Credit Hours:** (3) **Description** Focuses on current scholarship and research that address the marginalized voices of race in the teaching of composition. Closely examines the theories and research of this issue, and studies pedagogical strategies.

### **ENGL 8805 - Foundations of Writing Studies**

**Credit Hours:** (3) **Description** A multidisciplinary exploration of the purposes, technologies, and contexts for written communication.

### **ENGL 8806 - Resch Meth In Writing**

**Credit Hours:** (3) **Description** Bibliographic techniques and an introduction to empirical methodologies for the study of the writing process and the testing of written documents.

### **ENGL 8807 - Wksp/Govmt & Corp Wrtg \*\***

**Credit Hours:** (3) **Description** Textual and contextual analysis of the kinds of writing produced most often in government, law, and business; practice in writing correspondence reports, briefs, manuals, and proposals.

### **ENGL 8808 - Wksp/Sci & Techn Wrtg \*\***

**Credit Hours:** (3) **Description** Textual and contextual analysis of the kinds of writing produced most often in industry and the academic research community; practice in writing documents such as technical proposals, reports, computer documentation, and papers for publication.

### **ENGL 8809 - Technical Editing \*\***

**Credit Hours:** (3) **Description** Current practices in editing and publication in the field of technical communication; topics include copy-editing, substantive editing, author-editor relations, and the production practice. **PREREQUISITE(S):** Permission of the Graduate Coordinator.

### **ENGL 8811 - Internship Prof Wrtng**

**Credit Hours:** (3) **Description** Assigned on the basis of qualifications and availability, student does a semester's work in technical, scientific, legal, government, or business writing and provides an extensive report and analysis. **NOTE:** Students who are on academic probation will not be allowed to register for this course. **NOTE:** Students who are on academic probation will not be allowed to register for this course

### **ENGL 8812 - Mphs Urban Wrtng Ins I**

**Credit Hours:** (3) *Cross listing* (Same as ICL 7304-8304) **Description** (Same as ICL 7304-8304). Intensive study of writing research, current writing practices, and issues and trends related to K-12 writing instruction. English majors may not use this course to fulfill degree requirements.

### **ENGL 8813 - Mphs Urban Wrtng Ins II**

**Credit Hours:** (3) *Cross listing* (Same as ICL 7305-8305) **Description** (Same as ICL 7305-8305). Prepares K-12 teachers to improve their own writing practices and assume a leadership role in writing instruction in their schools. English majors may not use this course to fulfill degree requirements.

### **ENGL 8815 - Sem History Rhetoric**

**Credit Hours:** (3) **Description** Examines different periods and issues of rhetorical history each semester. One semester will consider Greek rhetoric (beginnings through the New Testament); another will consider Latin rhetoric (Cicero through the Renaissance); a third will cover Scottish, British, and American rhetoric. May be repeated for a maximum of 9 credit hours when topic changes.

### **ENGL 8818 - Collaborative Writing \*\***

**Credit Hours:** (3) **Description** Theoretical and research-based focus on managing and developing collaborative writing projects and processes.

### **ENGL 8819 - Rhetoric Of Science**

**Credit Hours:** (3) *Cross listing* (Same as COMM 7819-COMM 8819) **Description** (Same as COMM 7819-8819).

This course examines scientific and technical communication from rhetorical perspective, showing how scientific knowledge is shaped not only by data and method, but also by persuasive purposes and sociocultural forces. Grades of A-F, or I will be given.

### ENGL 8820 - Topics In Rhetoric

**Credit Hours:** (3) *Cross listing* (Same as COMM 7820-COMM 8820) **Description** (Same as COMM 7820-8820).

Topical seminar devoted to an important aspect of the history, theory, or criticism of rhetoric. May be repeated for a maximum of 9 credit hours when topics change.

**PREREQUISITE(S):** Permission of instructor

### ENGL 8822 - Cont Comp Theory

**Credit Hours:** (3) **Description** Examines relationship between rhetorical and composition theory and contemporary philosophy, especially poststructuralism, neo-pragmatism, and hermeneutics.

### ENGL 8823 - Topics In Composition

**Credit Hours:** (3) **Description** Topics can include invention, the writing process, writing assessment, style, and writing program administration. May be repeated for a maximum of 9 credit hours when topics change.

### ENGL 8890 - Topic/Technical Writing

**Credit Hours:** (3) **Description** Intensive study of specialized areas in technical writing. May be repeated for a maximum of 9 credit hours when topics change.

### ENGL 8900 - Engl Stds Colloquium

**Credit Hours:** (3) **Description** Defines and compares the history, research methodologies, and current issues of each of the concentrations in the doctoral program to provide integrative understanding of the discipline, and guide the student toward preparing and defending the dissertation proposal.

### ENGL 9000 - Dissertation

**Credit Hours:** (1-9) **Description** No more than 9 hours may be applied toward the degree. Grades of S, U, or IP will be given.

## Exercise, Sport and Movement Sciences

### ESMS 6000 - Exer Test Interp Lab

**Credit Hours:** (3) Former: 6000 **Description** Acquisition and practice of laboratory/clinical skills in measurement techniques, tools, and interpretations of physical performance and fitness; introduces theoretical and functional techniques of graded exercise testing for functional and/or diagnostic assessment. **PREREQUISITE(S):** BIOL 2010/2011 and 2020/2021; ESMS 2004, 2015, 3020, 3050, 3420, 3450, 3603, 3703, 3803 or 3853; HMSE 2000, or permission of instructor.

### ESMS 6010 - Supp/Food/Drugs Health

**Credit Hours:** (3) Former: (EXSS 6010) **Description** A comprehensive exposure to the role of nutrition in optimizing performance and training adaptations, including macro- and micronutrient intake, proper timing and amount of intake, and analysis of the validity of proposed ergogenic performance and/or structural adaptations.

### ESMS 6020 - Clinical Biomechanics

**Description** People with disabilities include segments of American society that are considered physically, socially, mentally, emotionally, and chronologically abnormal. Emphasis will be placed on examining the needs of these special groups and individuals in health and exercise settings. **PREREQUISITE(S):** ESMS 3020, ESMS 3410 (or ESMS 3405) and permission of instructor.

### ESMS 6406 - Exercise Test/ECG Intrap

**Credit Hours:** (3) Former: (EXSS 6406) **Description** Introduction to methods of conducting ECG and cardiopulmonary exercise testing for asymptomatic and symptomatic populations; ACSM principles of exercise testing and methods of ECG interpretation. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### ESMS 6603 - Adv Meth Strength Cond

**Credit Hours:** (3) Former: 6603 **Description** Advanced study of training principles for strength and conditioning programs and their underlying physiological bases. **PREREQUISITE(S):** BIOL 2010/2011, 2020/2021; ESMS 2004, 2015, 3020, 3050, 3420, 3603, 3703, 3803 or 3853; HMSE 2000, or permission of instructor.

## **ESMS 6902-6911 - Special Topics in Exercise, Sport, and Movement Sciences**

**Credit Hours:** (3) Former: (EXSS 6902) **Description** Current topics in exercise, sport, and movement sciences. May be repeated with change in topic. See online class listings for topic.

## **ESMS 7020 - Pub/Prop in Health & Biomed\*\***

**Credit Hours:** (3) Former: (EXSS 7020). **Description** Steps involved in preparing external funding proposals and manuscripts for publication. Particular attention given to the following: organizing document components, effective writing techniques, documentation issues, interpretation of findings, sentence structure, and reference citing. Identification of appropriate journals for publication consideration as well as common and novel funding sources (federal, state, local, and private) for supporting research work.

## **ESMS 7123 - Mech Analysis Mtr Skill**

**Credit Hours:** (3) Former: (PHED 7123)(EXSS 7123) **Description** Experiences that will enhance the understanding and practical application of the laws of mechanical physics to the fundamental techniques utilized in the performance of physical activities.

## **ESMS 7133 - Current Readings ESMS**

**Credit Hours:** (3) Former: (PHED 7133)(EXSS 7133) **Description** Directed readings in area of exercise, sport and movement sciences; materials selected to strengthen areas of study. May be repeated for a maximum of 9 credit hours. Permission of instructor. Grades of A-F, or IP will be given.

## **ESMS 7142 - Seminar/Health Sprt Sci**

**Credit Hours:** (1-3) Former: (HLTH 7142)(EXSS 7142) **NOTE:** ESMS majors may not use this course to fulfill degree requirements. May be repeated for maximum of 3 credits. Permission of instructor. Grades of S, U, or IP will be given.

## **ESMS 7152 - Problems in ESMS**

**Credit Hours:** (3) Former: (EXSS 7152) *Cross listing* (HPRO 7152/NUTR 7152/PETE 7152) **Description** Independent study and/or research project on selected problems and issues

in exercise, sport and movement sciences. Permission of instructor. Grades of A-F, or IP will be given.

## **ESMS 7163 - Advanced Motor Learning**

**Credit Hours:** (3) Former: (PHED 7163)(EXSS 7163) **Description** Analysis of research evidence related to motor skill learning and performance; emphasis on feedback mechanisms, practice variables, and retention and transfer of skills.

## **ESMS 7173 - Sport/Exercise Psych**

**Credit Hours:** (3) Former: (EXSS 7173) **Description** Survey of literature related to psychological aspects of participation in sport, exercise, and physical activity settings.

## **ESMS 7201 - Phys Exer Musculoskltl\*\***

**Credit Hours:** (3) Former: (EXSS 7201) **Description** An analysis of the physiological bases of musculoskeletal performance as well as specific adaptations that occur consequent to various regimens of exercise; discussion of selected techniques for assessing musculoskeletal function and structure.

## **ESMS 7202 - Phys Ex Mtbolc/Cardresp\*\***

**Credit Hours:** (3) Former: (EXSS 7202) **Description** An analysis of the acute and chronic metabolic/cardiorespiratory bases of human performance and fitness under various internal and external environmental conditions; discussion of selected techniques for assessing metabolic/cardiorespiratory function and structure.

## **ESMS 7210 - Anlys Muscle Function**

**Credit Hours:** (3) Former: (EXSS 7210) **Description** Theoretical bases for and applications of isokinetic (velocity-controlled) and isoinertial (dynamic constant external resistance) testing; students are guided in developing and evaluating new specialized protocols for assessing musculoskeletal function with an emphasis on velocity-spectrum and load-spectrum testing; data interpretation will be stressed.

## **ESMS 7220 - Adv Skltl Mscl Str/Fnct**

**Credit Hours:** (3) Former: (EXSS 7220) **Description** In-depth study of the skeletal muscle system; follows ESMS 7201 and covers gross, cellular, and molecular responses and

adaptations of skeletal muscle of various types of human exercise; detailed information critical to the graduate student specializing in or interested in human skeletal muscle and exercise.

### ESMS 7230 - Exercise Endocrinology

**Credit Hours:** (3) Former: (EXSS 7230) **Description** Introduces principles of hormonal regulation of human physiological function and methods of assessing endocrine status; examines hormonal responses and adaptations to exercise and physical activity in healthy and diseased humans, testing and analysis procedures, and human exercise responses.

### ESMS 7240 - Athero/Cvd Patho/Interv

**Credit Hours:** (3) Former: (EXSS 7240) **Description** In-depth review of atherosclerosis and associated clinical manifestations; prevention and treatment emphasizing exercise, nutrient, and pharmacological therapy. **PREREQUISITE(S):** Permission of instructor.

### ESMS 7250 - Motor Control Bhvl Emp

**Credit Hours:** (3) Former: (EXSS 7250) **Description** Analysis of theoretical and empirical basis for psychological mechanisms underlying movement control and skill development. **PREREQUISITE(S):** Permission of instructor.

### ESMS 7255 - Anatomy of Motor Control

**Credit Hours:** (3) **Description** Foundation of systems-level neuroscience focusing on normal function and pathology within the central nervous system (CNS). Functional and regional neuroanatomy will be presented. Coverage includes review of axon physiology and neurotransmission, anatomical organization of the CNS, sensory and motor functions, and description of frequently encountered neurological disorders relevant to physical therapy. **PREREQUISITE(S):** permission of instructor.

### ESMS 7300 - Morphological Foundations of Strength Development\*\*

**Credit Hours:** (3) Former: (EXSS 7300) **Description** Gross structure and function of the musculoskeletal system as related to purposeful movement of the human body during resistance training activities. **PREREQUISITE(S):** Undergraduate Degree A-F/I

### ESMS 7532 - Resrch/Sport Neuromechn

**Credit Hours:** (3) Former: (EXSS 7532) **Description** Hands-on research methods training, including technological training in neuromechanical data collection and analysis; tests reliability and validity of data obtained using different technologies to examine acute response and chronic adaptation to exercise. **PREREQUISITE(S):** ESMS 7123 or permission of instructor.

### ESMS 7542 - Adv Kinesiology

**Credit Hours:** (3) Former: (PHED 7542)(EXSS 7542) **Description** Analysis of mechanical factors related to body motions using experimentation and computer analysis of biophysical data; applications-intensive course involving collaboration between a faculty member and one or more students. **PREREQUISITE(S):** Permission of instructor.

### ESMS 7800 - Internship in ESMS

**Credit Hours:** (3) Former: (PHED 7542) (EXSS 7800) **Description** Directed laboratory experience focusing on development of knowledge, skills, and techniques needed to function as Exercise and Sport Science specialist in public or private settings. Does not substitute for ESMS 7900 or serve as a capstone experience. **PREREQUISITE(S):** Permission of instructor. Grades of S, U, or IP will be given.

### ESMS 7900 - Research Laboratory Residency

**Credit Hours:** (1-6) Former: (formerly EXSS 7850, ESMS 7850). *Cross listing* (NUTR 7900). **Description** Capstone experience focused on the development and/or application of research evidence to professional practice in either ESMS or Nutrition Science. Involves 40 contact hours per credit hour and is typically undertaken in one of the College of Health Sciences research laboratories, although other UM campus sites focused on evidence-based practice may be considered for approval. Grades of S, U, or IP will be given.

### ESMS 7902-7911 - Special Topics Exercise, Sport and Movement Science\*\*

**Credit Hours:** 1-3 Former: (PHED 7903-13) (EXSS 7902-11) *Cross listing* (PHED 7903-7913 and ESMS 8209-8211). **Description** (1-3) (PHED 7903-13) (EXSS 7902-11) Current topics in exercise, sport and movement science. May be repeated with change in topic May be repeated with change in topic. Standard Letter

### ESMS 7950 - Applied Project in ESMS

**Credit Hours:** (1-6) Former: (EXSS 7950) **Description** Scholarly capstone experience in which students integrate and apply discipline-specific knowledge, skills, and insights in developing a product related to their professional goals as approved by a three-person project committee.

**PREREQUISITE(S):** Completion of 18 credit hours in the program of study with a minimum graduate GPA of 3.00 and permission of instructor. Grades of S, U, or IP will be given.

### ESMS 8020 - Pub/Prop in Health & Biomed\*\*

**Credit Hours:** (3) Former: (EXSS 8020). **Description** Steps involved in preparing external funding proposals and manuscripts for publication. Particular attention given to the following: organizing document components, effective writing techniques, documentation issues, interpretation of findings, sentence structure, and reference citing. Identification of appropriate journals for publication consideration as well as common and novel funding sources (federal, state, local, and private) for supporting research work.

### ESMS 8081 - Supervised Research

**Credit Hours:** (1-6) Former: (EXSS 8081) **Description** Collaborative research with faculty within the major to include planning, design, management, analysis, and reporting of research. May be repeated as often as desired, but only 9 credit hours count toward the degree. **PREREQUISITE(S):** Permission of instructor. Grades of S, U, or IP will be given.

### ESMS 8123 - Mech Analysis Mtr Skill

**Credit Hours:** (3) Former: (8123) **Description** Experiences that will enhance the understanding and practical application of the laws of mechanical physics to the fundamental techniques utilized in the performance of physical activities.

### ESMS 8133 - Current Readings ESMS

**Credit Hours:** (3) Former: (PHED 7133)(EXSS 8133) **Description** Directed readings in area of exercise, sport and movement sciences; materials selected to strengthen areas of study. May be repeated for a maximum of 9 credit hours. **PREREQUISITE(S):** Permission of instructor Grades of A-F, or IP will be given.

### ESMS 8142 - Seminar/Health Sprt Sci

**Credit Hours:** (1-3) Former: (HLTH 7142)(EXSS 8142) **NOTE:** ESMS majors may not use this course to fulfill degree requirements. May be repeated for maximum of 3 credits. **PREREQUISITE(S):** Permission of instructor Grades of S, U, or IP will be given.

### ESMS 8163 - Advanced Motor Learning

**Credit Hours:** (3) Former: (PHED 8163)(EXSS 8163) **Description** Analysis of research evidence related to motor skill learning and performance; emphasis on feedback mechanisms, practice variables, and retention and transfer of skills.

### ESMS 8173 - Sport/Exercise Psych

**Credit Hours:** (3) Former: (EXSS 8173) **Description** Survey of literature related to psychological aspects of participation in sport, exercise, and physical activity settings.

### ESMS 8201 - Phys Exer Musculosklt\*\*

**Credit Hours:** (3) Former: (EXSS 8201) **Description** An analysis of the physiological bases of musculoskeletal performance as well as specific adaptations that occur consequent to various regimens of exercise; discussion of selected techniques for assessing musculoskeletal function and structure.

### ESMS 8202 - Phys Ex Mtbolc/Cardresp\*\*

**Credit Hours:** (3) Former: (EXSS 8202) **Description** An analysis of the acute and chronic metabolic/cardiorespiratory bases of human performance and fitness under various internal and external environmental conditions; discussion of selected techniques for assessing metabolic/cardiorespiratory function and structure.

### ESMS 8210 - Anlys Muscle Function

**Credit Hours:** (3) Former: (EXSS 8210) **Description** Theoretical bases for and applications of isokinetic (velocity-controlled) and isoinertial (dynamic constant external resistance) testing; students are guided in developing and evaluating new specialized protocols for assessing musculoskeletal function with an emphasis on velocity-spectrum and load-spectrum testing; data interpretation will be stressed.

### ESMS 8220 - Adv SklI Msci Str/Fnct

**Credit Hours:** (3) Former: (EXSS 8220) **Description** In-depth study of the skeletal muscle system; follows ESMS 7201 and covers gross, cellular, and molecular responses and adaptations of skeletal muscle of various types of human exercise; detailed information critical to the graduate student specializing in or interested in human skeletal muscle and exercise.

### ESMS 8230 - Exercise Endocrinology

**Credit Hours:** (3) Former: (EXSS 8230) **Description** Introduces principles of hormonal regulation of human physiological function and methods of assessing endocrine status; examines hormonal responses and adaptations to exercise and physical activity in healthy and diseased humans, testing and analysis procedures, and human exercise responses.

### ESMS 8240 - Athero/Cvd Patho/Interv

**Credit Hours:** (3) Former: (EXSS 8240) **Description** In-depth review of atherosclerosis and associated clinical manifestations; prevention and treatment emphasizing exercise, nutrient, and pharmacological therapy.  
**PREREQUISITE(S):** Permission of instructor.

### ESMS 8250 - Motor Control Bhvl Emp

**Credit Hours:** (3) Former: (EXSS 8250) **Description** Analysis of theoretical and empirical basis for psychological mechanisms underlying movement control and skill development. **PREREQUISITE(S):** Permission of instructor

### ESMS 8255 - Anatomy of Motor Control

**Credit Hours:** (3) **Description** Foundation of systems-level neuroscience focusing on normal function and pathology within the central nervous system (CNS). Functional and regional neuroanatomy will be presented. Coverage includes review of axon physiology and neurotransmission, anatomical organization of the CNS, sensory and motor functions, and description of frequently encountered neurological disorders relevant to physical therapy.

### ESMS 8300 - Morphological Foundations of Strength Development

**Credit Hours:** (3) **Description** Gross structure and function of the musculoskeletal system as related to purposeful movement of the human body during resistance training activities. **PREREQUISITE(S):** Undergraduate Degree

### ESMS 8532 - Resrch/Sport Neuromechn

**Credit Hours:** (3) Former: (EXSS 8532) **Description** Hands-on research methods training, including technological training in neuromechanical data collection and analysis; tests reliability and validity of data obtained using different technologies to examine acute response and chronic adaptation to exercise. **PREREQUISITE(S):** ESMS 7201 or permission of instructor.

### ESMS 8542 - Adv Kinesiology

**Credit Hours:** (3) Former: (PHED 7542)(EXSS 8542) **Description** Analysis of mechanical factors related to body motions using experimentation and computer analysis of biophysical data; applications-intensive course involving collaboration between a faculty member and one or more students. **PREREQUISITE(S):** Permission of instructor.

### ESMS 8902-8911 - Special Topics Exercise, Sport and Movement Science\*\*

**Credit Hours:** (1-3) Former: (EXSS 8902-11) **Description** Current topics in exercise, sport and movement sciences. May be repeated with change in topic.

### Experiential Learning Credit

#### ELC 7115 - Experiential Learning Credit

**Credit Hours:** (1) **Description** A systematic process for evaluating and credentialing graduate-level learning gained in a variety of contexts. Students will provide documentation of graduate-level knowledge and skills garnered in non-traditional settings to expert faculty reviewers.

### Faith and Health

#### FTHT 7000 - Practicum in Faith Health 1

**Credit Hours:** (3) **Description** Students will participate in practical and immersive work experiences at appropriate healthcare settings (e.g., hospitals, clinics) such as the Church Health Center and Methodist Lebonheur Healthcare, in order to fulfill the pre-assessed University of Memphis requirements for Experiential Learning Credits (ELC). Grade mode of S/U,I. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

#### FTHT 7001 - Practicum in Faith Health 2

**Credit Hours:** (3) **Description** Students will participate in practical and immersive work experiences at appropriate healthcare settings (e.g., hospitals, clinics) such as the Church Health Center and Methodist Lebonheur Healthcare, in order to fulfill the pre-assessed University of Memphis requirements for Experiential Learning Credits (ELC). Grade mode of S/U, I. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **FTHT 7002 - Comm & Whole Person Healthcare**

**Credit Hours:** (3) **Description** With a strong focus on the Church Health Center and educating students on the holistic method of care provided to patients through this organization, this class will explore issues in community-based health and healthcare systems as they relate to whole person healthcare.

### **FTHT 7003 - Intersection Faith and Health**

**Credit Hours:** (3) **Description** Faith and health are human cultural universals that have a long history of reciprocal interaction, especially in serving underserved populations. This course will study the history of their interaction through a historical and theological framework, and delve into contemporary issues and models of intersection through examining history, models of healthcare, and case studies. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

## **Finance**

### **FIR 6011 - Retirement and Estate Planning \*\***

**Credit Hours:** (3) **Description** Survey of law of taxation as applied to transmission of property by gift or death and its impact upon accumulations of wealth; estate planning from individual viewpoint designed to create, maintain, and distribute maximum estate possible.

### **FIR 6310 - Real Estate Law \*\***

**Credit Hours:** (3) **Description** This course covers law and legal instruments as applied to real estate and is designed to serve the needs of property owners and those engaged in the real estate business.

### **FIR 6320 - Real Estate Finance \*\***

**Credit Hours:** (3) **Description** Terminology, legislation, principles, and analytical techniques pertaining to financing of real estate; perspective of lender, residential borrower, and income property borrower.

### **FIR 6330 - Principles of Property Management**

**Credit Hours:** 3 **Description** This course focuses on the field of property management. The role of the property manager and responsibilities has evolved through time and requires a more specialized individual prepared for the challenges of property management. This class will provide not only an overview of the field of property management, but also the unique differences between different types of property management when it comes to residential, office, retail, and industrial property. This class is ideal not only for the student wanting to more fully understand the field of property management, but designed for the student wanting to make this a career.

### **FIR 6331 - Stock Portfolio Mgmt**

**Credit Hours:** (3) *Cross listing* (Same as FIR 4331) **Description** (Same as FIR 4331). Development and monitoring of investment portfolio by explaining possible investment alternatives; terminology and analysis techniques necessary to fulfill future financial goals. Undergraduate students will assist graduate students in managing a real equity portfolio of \$500,000.

### **FIR 6340 - Real Estate Appraisal \*\***

**Credit Hours:** (3) **Description** Basic terminology, principles, procedures, and issues; nature of value, principles of value, appraisal process, market approach, cost approach, capitalization of income approach, gross rent multiplier approach, and appraisal reports.

### **FIR 6350 - Real Estate Investment \*\***

**Credit Hours:** (3) **Description** Principles and practices reviewed and evaluated; investment strategy, ownership forms, tax implications, cash flow analysis, measures of return, risk management, and property selection.

### **FIR 6550 - International Finance \*\***

**Credit Hours:** (3) **Description** Financing international trade and investments; foreign exchange markets and exchange

rates; balance of payments; current developments in international financial cooperation.

### **FIR 6610 - Cases in Financial Planning and Analysis**

**Credit Hours:** (3) Former: 6610 **Description** Application of tools and principles introduced in previous courses to develop up-to-date problem-solving techniques; cases approached from standpoint of top-level management, utilizing both quantitative and qualitative analysis.

### **FIR 6620 - Cases in Financial Planning**

**Credit Hours:** (3) **Description** Case study based capstone course covering aspects of the financial planning process, including ethics, financial planning principles and concepts, investment planning tax planning, insurance, education planning, retirement planning and estate planning.  
**PREREQUISITE(S):** FIR 6011

### **FIR 6710 - Commercial Banking**

**Credit Hours:** (3) **Description** Study of bank management and bank regulation; examination of conditions and regulations affecting banking decisions; exploration of current theories of profitable bank operations.

### **FIR 6720 - Mgmt Financl Institutns \*\***

**Credit Hours:** (3) **Description** Financial policies and decision-making peculiar to financial institutions in the United States; management of institutions consistent with adequate standards of liquidity and solvency.

### **FIR 6721 - Fixed Income and Derivatives**

**Credit Hours:** (3) **Description** Introduction to fixed income securities, interest rate risk and the structure of debt markets, as well as futures, options, forwards and swaps (widely used by investment firms and corporations to manage financial risks), with primary emphasis on their practical application. **PREREQUISITE(S):** FIR 7410.

### **FIR 6730 - Financial Analysis/Certification**

**Credit Hours:** (3) **Description** Preparation for financial market careers; development of personal financial planning and investment portfolio management skills; preparation for CFP and CFA certifications.

### **FIR 6770 - Security Analysis/Port Mgmt**

**Credit Hours:** (3) **Description** Development of techniques for finding actual worth of securities, primarily stocks and bonds; selection, timing, diversification, and other aspects of supervising investment funds. May be repeated for a maximum of 6 hours **PREREQUISITE(S):** Permission of department.

### **FIR 6810 - Prop & Liability Insur**

**Credit Hours:** (3) **Description** Forms and functions of fire, marine, automobile, general liability, and other types of property and liability insurance; emphasis on business and industrial applications.

### **FIR 6820 - Life & Health Insurance**

**Credit Hours:** (3) **Description** Functions of life and health insurance; emphasis on economic security needs, human behavior, and problems related to death and dying; individual life, health, and annuity contracts and social insurance; concepts in risk selection and regulation.

### **FIR 6870 - Risk Management \*\***

**Description** Addresses problems faced by risk managers encompassing traditional aspects of risk management and insurance including insurance, reinsurance, hedging and capital markets as tools to manage or mitigate risk.

### **FIR 7070 - Financial Conc/Business**

**Credit Hours:** (3) Former: (7010) **Description** (7010). Discounting, risk measurement, valuation, capital budgeting, cost of capital, capital structure, dividend policy, working capital, financial instruments, and markets.

### **FIR 7155 - Global Financial Mgmt \*\***

**Credit Hours:** (3) **Description** Theory and practice of modern financial theory as currently practiced in an interdependent global economy by corporate financial managers, financial consultants, and managers of financial institutions.

### **FIR 7160 - Executive Financial Mgmt**

**Credit Hours:** (2) **Description** Advanced capital budgeting theory and practice including different types of cash flow



estimation and analysis, equivalent annual annuity, leveled and unleveled costs, and product pricing; covers theory and practice of a firm's capital structure, dividend policy, stock repurchasing decisions, and financial planning and forecasting.

### **FIR 7170 - Multinational Financial Mgmt**

**Credit Hours:** (3) **Description** Covers financial management practiced by multinational enterprise with emphasis on balance of payments, foreign exchange risk management, global money and capital markets, multinational treasury functions and political risk analysis.

### **FIR 7171 - Intl Financial Markets**

**Credit Hours:** (3) **Description** Analysis of operation and regulation of international financial markets for derivatives (options, futures, and swaps), equities, debt, and currencies.

### **FIR 7173 - Financial Anlys/Certification \*\***

**Credit Hours:** (3) **Description** Course is designed to accomplish three objectives: (1) Prepare students for careers in financial markets, (2) Develop investments skills for personal financial planning such as savings and retirement, and (3) Familiarize students with certifications such as CFA, CFP and the content for such exams.

### **FIR 7301 - Contemp Rles Thry/Prac \*\***

**Credit Hours:** (3) **Description** Overview of significant topics in real estate finance, investments, and valuation; lecture and group discussion of key issues in real estate theory and practice.

### **FIR 7302 - RI Estate Dvlpmt & Sustainblty**

**Credit Hours:** (3) **Description** Analysis of methodologies and market strategies in the evaluation of investments in commercial and industrial land development; identification, conceptualization, and execution of action programs associated with developing energy efficient and sustainable real estate projects, industrial parks, warehouse-distribution centers, and related land uses.

### **FIR 7310 - Sustainable Real Estate**

**Credit Hours:** (3) **Description** course will examine the decisions to minimize present and future energy needs, as well as the societal collective decision to promote technological

change for lower energy consumption, and to foster market forces that will sustain our environment and our economy.

### **FIR 7320 - Financing Real Est Trans**

**Credit Hours:** (3) **Description** Economic, institutional, and legal issues associated with real estate finance; emphasis on investor and developer financing, and secondary mortgage market.

### **FIR 7350 - Real Est Invest Anlys**

**Credit Hours:** (3) **Description** Analytical tools, concepts, and decision rules for real estate asset acquisition and disposition; ownership forms, tax structuring, cash flow forecasting, risk analysis, and decision making.

### **FIR 7410 - Invst Thry Portfol Mgmt \*\***

**Credit Hours:** (3) **Description** Introductory graduate level course in the area of investments and portfolio management; considers qualitative and quantitative risk and return characteristics of various investment opportunities, fundamental valuation models, timing techniques, efficient markets, speculation and hedging, and portfolio theory and practice.

### **FIR 7648 - Entrepreneurial Finance**

**Credit Hours:** (3) **Description** The purpose of this course is to provide students with an understanding of how new business ventures are conceived, planned, financed and harvested. The course is taught primarily from the vantage point of the entrepreneur, but will also view things from the perspective of investors (Angel investors, Venture Capitalists, etc.).

### **FIR 7710 - Sem Investment Thry**

**Credit Hours:** (3) **Description** Current literature in investment theory and portfolio analysis; topics include statistical techniques of analysis, technical analysis, fundamental analysis, investor perceptions, efficient markets, investigation of risk measurements, portfolio theory and applications, and speculative markets.

### **FIR 7721 - Financial Derivatives**

**Credit Hours:** (3) **Description** Understanding futures, options, forwards, and swaps (widely used by investment firms and corporations to manage financial risk), with primary

emphasis on their practical application in financial and commodity markets.

### **FIR 7724 - Micro-Structure Theory**

**Credit Hours:** (3) **Description** Market microstructure theory; empirical underpinnings, empirical research, and critical contemporary issues.

### **FIR 7725 - Eqty Mkts:Trad/Struct**

**Credit Hours:** (3) **Description** Trading technologies, measuring and controlling trading costs, competition between exchanges and alternative trading systems, global market developments, trading strategies, impact of networks and regulation; simulation software provides hands-on experience making tactical trading decisions in different market structures.

### **FIR 7726-7735 - Current Topics in Finance, Insurance, and Real Estate**

**Credit Hours:** (3) **Description** By permission of instructor.

### **FIR 7810 - Adv Financial Mgmt**

**Credit Hours:** (3) **Description** The most significant contributions to the advanced literature on managerial finance. Topics include capital budgeting under risk, capital rationing, cost of capital, capital structure, dividend policy, firm valuation, and working capital management.

### **FIR 7840 - Python for Finance**

**Credit Hours:** (3) **Description** Application of statistical and quantitative tools to problem solving and decision making in all disciplines of finance. The tools include, but are not limited to, Python programming, regression analysis, and machine learning. Extensive use of computer software packages. No prior experience with Python is required.

### **FIR 7910 - Problems In Fir**

**Credit Hours:** (1-6) **Description** Directed independent reading and research projects in the finance, insurance, or real estate areas selected by the student with approval of supervising faculty member and Faculty Director. Program of study must be approved prior to enrollment. Grades of A-F, or IP will be given.

### **FIR 7911 - Internship in FIR**

**Credit Hours:** (3) **Description** Internship in Finance, Insurance and Real Estate to gain on-the-job experience in real-life environment. Project to be approved and supervised by department faculty. Credit allowed only after acceptance of report.

### **FIR 7996 - Thesis**

**Credit Hours:** (1-6) **Description** Candidates desiring to write a thesis must fill out an application on the approved form after consulting with the major professor.

### **FIR 8170 - Intl Financial Mgmt**

**Credit Hours:** (3) Former: (7620) **Description** (7620). Selected problems in international finance, foreign investment, and the international payments system; gold movements; foreign central banking, and international aspects of money markets; the impact of international financial cooperation.

### **FIR 8410 - Invst Thry Portfol Mgmt**

**Credit Hours:** (3) **Description** Introductory graduate level course in the area of investments and portfolio management; considers qualitative and quantitative risk and return characteristics of various investment opportunities, fundamental valuation models, timing techniques, efficient markets, speculation and hedging, and portfolio theory and practice.

### **FIR 8710 - Sem Investment Thry**

**Credit Hours:** (3) **Description** Advanced theoretical and empirical topics in investments and portfolio management. May be repeated for credit when topics vary. Grades of A-F will be given.

### **FIR 8721 - Financial Derivatives**

**Credit Hours:** (3) **Description** Understanding futures, options, forwards, and swaps (widely used by investment firms and corporations to manage financial risk), with primary emphasis on their practical application in financial and commodity markets.

### **FIR 8724 - Microstructure Theory**

**Credit Hours:** (3) **Description** Market microstructure theory; empirical underpinnings, empirical research, and critical contemporary issues. Grades of A-F will be given.

### **FIR 8725 - Financial Mkts: Trad/Struct**

**Credit Hours:** (3) **Description** Advanced theoretical and empirical topics in market microstructure. Grades of A-F will be given.

### **FIR 8726-8735 - Current Topics in Finance, Insurance, and Real Estate**

**Credit Hours:** (3) **Description** By permission of instructor.

### **FIR 8810 - Adv Financial Mgmt**

**Credit Hours:** (3) **Description** The most significant contributions to the advanced literature on managerial finance. Topics include capital budgeting under risk, capital rationing, cost of capital, capital structure, dividend policy, firm valuation, and working capital management. Grades of A-F will be given.

### **FIR 8820 - Thry/Prac Finan Mgmt**

**Credit Hours:** (3) **Description** Advanced theoretical and empirical topics in corporate finance. Grades of A-F will be given.

### **FIR 8840 - Quantitative Finan App**

**Credit Hours:** (3) **Description** Advanced applications of quantitative, statistical, and mathematical tools in finance. Grades of A-F will be given.

### **FIR 8850 - Seminar In Finance**

**Credit Hours:** (3) **Description** Advanced optics in finance. May be repeated for credit when topics vary. Grades of A-F will be given.

### **FIR 8910 - Problems In Finance**

**Credit Hours:** (1-6) **Description** Directed independent reading and research projects. May include an introduction to finance datasets, statistical packages, and programming languages needed to access and analyze these datasets. May be repeated for credit with topicjics vary. Grades of A-F will be given.

## **French**

### **FREN 6302 - Adv French Grammar**

**Credit Hours:** (3) **Description** Practical, syntactical, and lexical usage of contemporary French. Grades of S, U, or IP will be given.

### **FREN 6307 - French Lit & Civ to 1789**

**Credit Hours:** (3) **Description** A survey of French literature and civilization from the Middle Ages to the Revolution.

### **FREN 6308 - French Lit & Civ 1789-Present**

**Credit Hours:** (3) **Description** A survey of French literature and civilization from 1789 to the present.

### **FREN 6310 - French Translation**

**Credit Hours:** (3) **Description** An introduction to translation, focusing on practical applications and techniques for translating a variety of text types and authentic documents.

### **FREN 6415 - Francophone Literature**

**Credit Hours:** (3) **Description** Study of literature written in French in countries other than France. May be repeated for a maximum of 6 credit hours with change in content and permission of instructor. Grades of S, U, or IP will be given.

### **FREN 6791-6799 - Special Topics in French**

**Credit Hours:** (3)

### **FREN 6801 - Cont France/Francophone World**

**Credit Hours:** (3) **Description** Overview of major institutions and cultural aspects of contemporary France and the French-speaking world. Grades of S, U, or IP will be given.

### **FREN 7000 - French for Reading Knowledge**

**Credit Hours:** (3) **Description** Introduction to reading French; intensive drill in recognizing and interpreting grammatical structures, especially those peculiar to scholarly written language; emphasis on vocabulary building and on

determining the meaning of words not previously encountered; reading of texts in French at sight or after preparation. No previous knowledge of French required. May not be used to fulfill the degree requirements of any program. Grades of S, U, or IP will be given.

### **FREN 7101 - French/Busn & Econ**

**Credit Hours:** (3) **Description** Basic vocabulary and institutions necessary for dealing in the French business world. Open only to students enrolled in International MBA program. Grades of S, U, or IP will be given.

### **FREN 7305 - French Stylistics**

**Credit Hours:** (3) Former: (6305) **Description** (6305). Way in which texts produce meanings, development of analytic and interpretative skills with which to read the textuality of literary writing and to determine devices that affect its particular expressiveness; examination of vocabulary, syntax structure, and rhetorical figures as literary convention and as deviation from convention. Grades of S, U, or IP will be given.

### **FREN 7430 - 17th-century French Literature**

**Credit Hours:** (3) **Description** Close textual analysis of the works of the major writers of seventeenth-century France by approaching a variety of genres, such as classical theater (comedies and tragedies), poetry, philosophical literature, poetry, the novel, and the fable. It will also address the critical theory underlying French classical dramaturgy as well as that of the other genres under consideration. May be repeated with a change in topic. See online class listings for topic. Grades of S, U, or IP will be given.

### **FREN 7470-7479 - Special Topics in French Literature**

**Credit Hours:** (3) **Description** Literary movements, individual authors, or groups of authors of the nineteenth and twentieth centuries.

### **FREN 7492 - Resch In French Stds**

**Credit Hours:** (1-6) **Description** May be repeated for credit toward the concentration in French up to a maximum of 6 hours. Grades of A-F, or IP will be given. Grades of S, U, or IP will be given.

### **FREN 7501 - 19th Century French Lit**

**Credit Hours:** (3) **Description** Survey of literary movements and major authors of the nineteenth century with readings in all major genres.

### **FREN 7502 - 20th Century French Literature**

**Credit Hours:** (3) **Description** Analysis of the major movements and authors of twentieth-century French literature.

### **FREN 7503 - Advanced French Pedagogy**

**Credit Hours:** (3) **Description** Practical, research-based course related to communicative instruction, designed for those currently teaching, or planning to teach, French at the college or K-12 level. Standardized exams (PRAXIS, OPI) often required of beginning instructors will be covered.

### **FREN 7504 - Topics Francophone Literature**

**Credit Hours:** (3) **Description** This course is designed to provide the student with an understanding of one or more aspects of francophone literature, literature outside of Metropolitan France, by providing a historical and cultural survey of a particular topic this literature during the colonial and postcolonial periods. This course will look one or more of the different literatures and theoretical texts from the following francophone regions: North Africa, Sub-Saharan Africa, and the Caribbean.

### **FREN 7531 - Age of Enlightenment**

**Credit Hours:** (3) **Description** Comprehensive study of literary trends and innovations within the major genres as related to liberal ideas underlying the philosophy of Montesquieu, Voltaire, Diderot, Rousseau, and their contemporaries. Grades of S, U, or IP will be given.

### **FREN 7532 - Research in Lit and Culture**

**Credit Hours:** (3-6) **Description** Directed readings in the field. Several reports and a research paper will be required. May be repeated for credit toward the concentration in French up to 9 hours. Grades of S, U, or IP will be given.

## **German**

### **GERM 7000 - German for Reading Knowledge**

**Credit Hours:** (3) **Description** Introduction to reading German intensive drill in recognizing and interpreting grammatical structures, especially those peculiar to scholarly written language; emphasis on vocabulary building and on determining the meaning of words not previously encountered; reading of texts in German at sight or after preparation. No previous knowledge of German required. May not be used to fulfill the degree requirements of any program. Grades of S, U, or IP will be given.

### **GERM 7101 - Adv Busn German I**

**Credit Hours:** (3) **Description** German business organization; trade fairs; social security and welfare systems; intensive work with interpreting and composing German business letters and other correspondence; negotiation in German. Course is conducted in German. Open only to students admitted to International MBA program. Grades of S, U, or IP will be given.

### **GERM 7102 - Adv Busn German II**

**Credit Hours:** (3) **Description** German economy, European Union, European market, import/export, banking, currency. Course is conducted in German. Open only to students admitted to International MBA program. Grades of S, U, or IP will be given.

## **Health Administration**

### **HADM 7100 - Day 1 Sem I: Leadership Skills**

**Credit Hours:** (1) **Description** The Day One Seminar is designed to equip students with experiences which will assist them in developing personal and professional leadership skills and will enable them to function effectively as early careerists and entry level professionals. Seminar I will focus on team-building, self-assessment, interviewing, communication, and technical writing. Throughout the seminar, students interact with faculty and community leaders to engage in a set of unique experiential learning opportunities. Grades of S, U, or IP will be given.

### **HADM 7101 - Day 1 Sem II: Leadership Skills**

**Credit Hours:** (1) **Description** The Day One Seminar is designed to equip students with experiences which will assist them in developing personal and professional leadership skills and will enable them to function effectively as early careerists

and entry level professionals. Seminar II focuses on team-building, leading others, networking, business etiquette, and professional development. Throughout the seminar, students interact with faculty and community leaders to engage in a set of unique experiential learning opportunities.

### **HADM 7102 - Health Care Law \*\***

**Credit Hours:** (3) **Description** Covers legal topics in relationship to their effect on operation of health care organizations; includes informed consent, research, confidentiality, professional negligence, regulation of health care provider conduct, and other relevant topics.  
**PREREQUISITE(S):** One 7000-level historiography course in any field.

### **HADM 7103 - Health Planning \*\***

**Credit Hours:** (3) **Description** Application of strategic planning and management concepts and techniques to health care sector; focus on strategy formation, strategic planning process, business planning and business development.

### **HADM 7105 - Hlth Policy & Org Hlth Svs \*\***

**Credit Hours:** (3) **Description** This course explores the history and development of health policy and organization in the U.S., the forces affecting health policy, the impact of policy on health services delivery, and the most recent health care reform efforts. The course also covers the most basic knowledge, skills and attitudes required to manage health care organizations effectively.

### **HADM 7106 - Health Services Resrch**

**Credit Hours:** (3) Former: (POLS 7-8601) **Description** (POLS 7-8601). Issues and techniques in data collection for design and implementation of independent research projects; logic of conducting health services research, measurement, ethical considerations, logic of sampling, various methods of collecting data for health services research, and writing research proposal; introduction to program evaluation and specific quantitative decision-making techniques; overview of epidemiological concepts and techniques.

### **HADM 7107 - Health Care Ethics**

**Credit Hours:** (3) **Description** Overview of ethical theory and its relationship to individual and community health; discusses critical issues, including beginning of life, end of life, medical research, access to care, and justice; emphasizes

the critical decision making of individuals and how ethical thinking might inform public policy.

### **HADM 7108 - Health Care Finance I \*\***

**Credit Hours:** (3) **Description** Introduction to accounting and financial management focusing on the health care industry; includes understanding financial reports, cost behavior and profit analysis, cost allocation, pricing and service decisions, managerial accounting, planning and budgeting, time value analysis, and financial risk and return.

### **HADM 7109 - Health Information Systems \*\***

**Credit Hours:** (3) **Description** This course introduces and applies concepts of informatics and information systems in healthcare. This course covers the basics of health information systems management, federal regulations pertinent to health information, and technology standards and security. It also covers the complexities associated with planning the acquisition, implementation, utilization, and support of health information systems.

### **HADM 7110 - Leadership/Org Chg in Hlth Care \*\***

**Credit Hours:** (3) **Description** This course synthesizes theories and strategies for leadership and navigating organizational change in healthcare and is applicable for graduate and professional students in a variety of health-related disciplines. The course covers current theories of leadership and organizational behavior, focusing on healthcare applications. Emphasis will be placed on applying theoretical concepts in organizational situations such as assessing and leading organizational change. Synthesis of theories, strategies, and systems of managing and leading health care organizations; emphasis on team leadership skills, utilization and outcome analysis, change strategies, and planning.

### **HADM 7111 - Issues Hlth Serv Admn**

**Credit Hours:** (3) **Description** Seminar for discussion of health problems for underserved populations in US health care system; issues include cultural diversity, social diversity, health care access, and health disparities among and between diverse populations; focuses on improving patient-provider relations and staff relations through understanding diversity.

### **HADM 7113 - Sem Managed Hlth Care**

**Credit Hours:** (3) **Description** Role of health service administrator in a managed care organization (MCO); theories of negotiation, incentives structure, pricing, information systems, legal aspects, and regulatory issues applied to practical management situations for the MCO administrator; issues in public/private managed care markets addressed in class lecture, discussion, and group/individual projects.

### **HADM 7115 - Public Health Organizatn/Mgmt**

**Credit Hours:** (3) **Description** This course synthesizes theories, strategies and systems of leading public health care organizations. This course is designed for graduate students in a variety of health disciplines. The course will cover leading theories of leadership and focus on application in public health organizations. Topics include but are not limited to systems thinking, leading change and innovation, community health leadership, and public health law and ethics.

### **HADM 7116 - Adm Health Serv Orgs \*\***

**Credit Hours:** (3) **Description** Introduction to analysis of administrative practices in health services organizations: examines leadership roles, analyzes impact of professional roles on process within the organization, examines evolution of organizational design, appraises accountability relative to public trust.

### **HADM 7117 - Physician Practice Mgmt \*\***

**Credit Hours:** (3) **Description** Examines environmental context, financial management, operations management, human resources management, planning and marketing, and strategic management within the variety of ambulatory settings. May be repeated for a maximum of 12 credit hours

### **HADM 7120 - Independent Study \*\***

**Credit Hours:** (3) **Description** Independent investigation of research problems or directed readings in selected area of health administration.

### **HADM 7130 - Quality Tools in HC Management**

**Credit Hours:** (3) **Description** This course is designed to teach students the methodology and tools of Lean Six Sigma from development of a project charge to completion of the project. Students will lead a real-world project through all phases of Six Sigma, complete a comprehensive exam, and

defend the project to the instructor and a Master Black Belt. Upon successful completion, students will be certified Six Sigma Green Belts.

### **HADM 7140 - Population Health Management \*\***

**Credit Hours:** (3) **Description** This graduate course focuses on critical concepts in population health and population health management. Attention is given to both health care and public health dimensions of identifying, managing, and improving population health outcomes in an era of health care reform. Population-level determinants of health are addressed in detail, as are the rationale and tools for monitoring and improving health problems at a population level. Emphasis is given to specific models for population health management, as well as systemic innovations in health care and public health.

### **HADM 7150 - The Business of Wellness**

**Credit Hours:** (3) **Description** This course examines both the economic and psycho-social and community underpinnings of wellness programs and businesses. Topics include corporate health and fitness programs, the business case for wellness programs, building a culture of health in organizations, perspectives of employers and employees, and leading and managing a culture of health and wellness programs in private and public organizations. This course also explores the relationship between health policy, market-driven changes, the integration of wellness into business models, and the growth of the wellness industry.

### **HADM 7190 - Internship Hlth Admn I**

**Credit Hours:** (1-6) **Description** Participation in a field experience program, including a written report critically describing the student's responsibilities. Field experience may result from a supervised internship in cooperating public and non-profit organizations or from an appropriate administrative experience if the student is employed in a public or non-profit organization.

### **HADM 7204 - Healthcare Qual & Outcms Mgmt \*\***

**Credit Hours:** (3) **Description** This course is designed to acquaint the student with quality management philosophies, approaches, and methodologies for improving health systems and processes. Students completing this course will be able to identify, analyze and create a basic quality/outcome research proposal.

### **HADM 7206 - Managerial Epidemiology \*\***

**Credit Hours:** (3) **Description** Introduction to principles and tools of epidemiology, exploring distribution and determinants of disease, and examining ways to apply this knowledge to the management of health service organizations.

### **HADM 7208 - Health Care Finance II \*\***

**Credit Hours:** (3) **Description** Continuation of tools and techniques for financial management in health care settings, blending theory and practice through lecture and case analysis to provide students an opportunity to apply theory presented in class to practical examples.

### **HADM 7209 - Quant Methods for Hlth Svcs \*\***

**Credit Hours:** (3) **Description** Covers use and capabilities of Excel, particularly in the functional ability to construct operational and financial models for healthcare organizations; encourages active hands-on" participation of students in the learning process; all data sets relate specifically to health care: e.g.: DRG codes

### **HADM 7210 - Comp Expr/Hlth Care Mgmt**

**Credit Hours:** (3) **Description** Capstone course for the MHA program, requiring students to draw from all previous learning in the program. Major focus is a small-team project to create a needs analysis; identify gaps in health care services; plan an intervention (service or facility); and determine how to create, finance, staff, and deliver the intervention. Preparation of a Certificate of Needs (CON) also required.

### **HADM 7605 - Human Resources Admin \*\***

**Credit Hours:** (3) Former: (POLS 7-8605) **Description** (POLS 7-8605). Policies, methods, and techniques utilized in public and health organizations; special attention is given to problems reflecting contemporary demands upon human resource systems, capacity to diagnose problems, select the most effective means of addressing them, and plan appropriate courses of action developed through case studies.

### **HADM 7634 - Hlthcare Exec Leadership Skill**

**Credit Hours:** (3) *Cross listing* BA 7634. **Description** Content focuses on management of healthcare systems and

concepts specific to executive leadership in healthcare. The course provides skill building and knowledge expansion in the critical areas of leadership and management development in the context of a rapidly changing and evolving health care environment. The course is specifically designed to develop understanding of basic healthcare economics and financial concepts, delivery models, personal skills in conflict resolution, operational analysis, employee management, and quality improvement techniques useful for achieving individual and organizational objectives.

**PREREQUISITE(S):** Registration is by permit only.

### **HADM 7703 - Reading For Comps**

**Credit Hours:** (3) **Description** Arranged on an individual basis for graduate students in health administration only.

### **HADM 7705-7715 - Special Topics in Health Administration**

**Credit Hours:** (1-3) **Description** Intensive study of selected topics in health administration.

### **HADM 7718 - Med Tech Purchasing/Sales**

**Credit Hours:** (3) **Description** Describes changing health care market environment, provides knowledge and skills about purchasing behavior and selling strategies important in adoption of medical technologies and services surrounding their adoption; reviews purchasing behaviors of key stakeholders e.g., physicians, pharmacists, and materials managers in major health care institutions; covers appropriate approaches to selling medical technology products to health institutions.

### **HADM 7996 - Thesis**

**Credit Hours:** (1-6) **Description** The student must write and defend satisfactorily a thesis on a subject approved by the major professor. Grades of S, U, or IP will be given.

### **HADM 8102 - Health Care Law**

**Credit Hours:** (3) **Description** Covers legal topics in relationship to their effect on operation of health care organizations; includes informed consent, research, confidentiality, professional negligence, regulation of health care provider conduct, and other relevant topics.

### **HADM 8103 - Health Planning**

**Credit Hours:** (3) **Description** Application of strategic planning and management concepts and techniques to health care sector; focus on strategy formation, strategic planning process, business planning and business development.

### **HADM 8105 - Health Policy and the Organization of Health Services**

**Credit Hours:** (3) **Description** Explores development of health policy and regulation in the US, forces affecting health policy, and impact of regulation on health care delivery; regulatory issues and health care reform discussed and debated.

### **HADM 8106 - Health Services Resrch**

**Credit Hours:** (3) Former: (POLS 7-8601) **Description** (POLS 7-8601). Issues and techniques in data collection for design and implementation of independent research projects; logic of conducting health services research, measurement, ethical considerations, logic of sampling, various methods of collecting data for health services research, and writing research proposal; introduction to program evaluation and specific quantitative decision-making techniques; overview of epidemiological concepts and techniques.

### **HADM 8107 - Health Care Ethics**

**Credit Hours:** (3) **Description** Overview of ethical theory and its relationship to individual and community health; discusses critical issues, including beginning of life, end of life, medical research, access to care, and justice; emphasizes the critical decision making of individuals and how ethical thinking might inform public policy.

### **HADM 8108 - Health Care Finance I**

**Credit Hours:** (3) **Description** Introduction to accounting and financial management focusing on the health care industry; includes understanding financial reports, cost behavior and profit analysis, cost allocation, pricing and service decisions, managerial accounting, planning and budgeting, time value analysis, and financial risk and return.

### **HADM 8109 - Health Information Systems**

**Credit Hours:** (3) **Description** This course introduces and applies concepts of informatics and information systems in healthcare. This course covers the basics of health information systems management, federal regulations pertinent to health information, and technology standards and security. It also



covers the complexities associated with planning the acquisition, implementation, utilization, and support of health information systems. May be repeated for maximum of 6 credits

### **HADM 8110 - Leadershp/Org Chg in Hlth Care**

**Credit Hours:** (3) **Description** This course synthesizes theories and strategies for leadership and navigating organizational change in healthcare and is applicable for graduate and professional students in a variety of health-related disciplines. The course covers current theories of leadership and organizational behavior, focusing on healthcare applications. Emphasis will be placed on applying theoretical concepts in organizational situations such as assessing and leading organizational change.

### **HADM 8113 - Sem Managed Hlth Care**

**Credit Hours:** (3) **Description** Role of health service administrator in a managed care organization (MCO); theories of negotiation, incentives structure, pricing, information systems, legal aspects, and regulatory issues applied to practical management situations for the MCO administrator; issues in public/private managed care markets addressed in class lecture, discussion, and group/individual projects.

### **HADM 8115 - Public Health Organizatn/Mgmt**

**Credit Hours:** (3) **Description** This course synthesizes theories, strategies and systems of leading public health care organizations. This course is designed for graduate students in a variety of health disciplines. The course will cover leading theories of leadership and focus on application in public health organizations. Topics include but are not limited to systems thinking, leading change and innovation, community health leadership, and public health law and ethics.

**PREREQUISITE(S):** One 7/8000-level historiography course in any field.

### **HADM 8116 - Adm Health Serv Orgs**

**Credit Hours:** (3) **Description** Introduction to analysis of administrative practices in health services organizations: examines leadership roles, analyzes impact of professional roles on process within the organization, examines evolution of organizational design, appraises accountability relative to public trust.

### **HADM 8117 - Ambulatory Pract Mgmt**

**Credit Hours:** (3) **Description** Examines environmental context, financial management, operations management, human resources management, planning and marketing, and strategic management within the variety of ambulatory settings.

### **HADM 8120 - Independent Study**

**Credit Hours:** (3) **Description** Independent investigation of research problems or directed readings in selected area of health administration.

### **HADM 8140 - Population Health Management**

**Credit Hours:** (3) **Description** This graduate course focuses on critical concepts in population health and population health management. Attention is given to both health care and public health dimensions of identifying, managing, and improving population health outcomes in an era of health care reform. Population-level determinants of health are addressed in detail, as are the rationale and tools for monitoring and improving health problems at a population level. Emphasis is given to specific models for population health management, as well as systemic innovations in health care and public health.

### **HADM 8204 - Quality/Outcome Mgmt Hlth Care**

**Credit Hours:** (3) **Description** This course is designed to acquaint the student with quality management philosophies, approaches, and methodologies for improving health systems and processes. Students completing this course will be able to identify, analyze and create a basic quality/outcome research proposal. May be repeated for a maximum of 12 credit hours

### **HADM 8208 - Health Care Finance II**

**Credit Hours:** (3) **Description** Continuation of tools and techniques for financial management in health care settings, blending theory and practice through lecture and case analysis to provide students an opportunity to apply theory presented in class to practical examples.

### **HADM 8605 - Human Resources Admin**

**Credit Hours:** (3) Former: (POLS 7-8605) **Description** (POLS 7-8605). Policies, methods, and techniques utilized in

public and health organizations; special attention is given to problems reflecting contemporary demands upon human resource systems, capacity to diagnose problems, select the most effective means of addressing them, and plan appropriate courses of action developed through case studies.

### **HADM 8718 - Med Tech Purchasing/Sales**

**Credit Hours:** (3) **Description** Describes changing health care market environment, provides knowledge and skills about purchasing behavior and selling strategies important in adoption of medical technologies and services surrounding their adoption; reviews purchasing behaviors of key stakeholders e.g., physicians, pharmacists, and materials managers in major health care institutions; covers appropriate approaches to selling medical technology products to health institutions.

### **HADM 8800 - Guided Research in HSP**

**Credit Hours:** (3) **Description** Students will conduct health administration-related research under the mentorship of a faculty member. Grades of S, U, or IP will be given.

### **HADM 9000 - Dissertation**

**Credit Hours:** (1-9) **Description** Independent research for Doctor of Philosophy degree. Only 9 hours may be counted toward degree requirements. Students must be enrolled in this course during the semester in which the student expects to graduate. Grades of S, U, or IP will be given.

## **Health and Sport Science**

### **HMSE 7010 - Research Methods in Health Sciences \*\***

**Credit Hours:** (3) **Description** Introduction to health, nutrition, sport science, and/or exercise research/methodology. Addresses applicable research techniques and designs emphasizing planning, conducting, and reporting research, selecting appropriate statistical analyses, and interpreting findings. **PREREQUISITE(S):** Permission of instructor.

### **HMSE 7403 - Measurement/Evaluation**

**Credit Hours:** (3) Former: (PHED 7403) **Description** (PHED 7403). Includes selection, application, and evaluation of certain tests appropriate to Health Studies.

### **HMSE 7996 - Thesis**

**Credit Hours:** (1-6) Former: (FITW/HLTH/PHED /RECR 7996) **Description** Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Director of Graduate Programs. Grades of S, U, or IP will be given.

### **HMSE 8010 - Research Methods in Health Sciences \*\***

**Credit Hours:** 3 **Description** Introduction to health, nutrition, sport science, and/or exercise research/methodology. Addresses applicable research techniques and designs emphasizing planning, conducting, and reporting research, selecting appropriate statistical analyses, and interpreting findings. **PREREQUISITE(S):** Permission of instructor.

### **HMSE 9000 - Dissertation**

**Credit Hours:** 1-3 **Description** Directed independent research after successful completion of the comprehensive exam and doctoral committee approval of the dissertation prospectus. Credit may be earned over a period of several semesters. Grades of S, U, or IP will be given. 12 **PREREQUISITE(S):** Successful completion of written doctoral comprehensive exams and dissertation prospectus.

## **Health Promotion**

### **HPRO 6202-6020 - Workshops in HPRO**

**Credit Hours:** (1-3) Former: (HLTH 6202-20) **Description** Selected phases of health promotion through group study; in-depth study of areas of interest and need for persons in health promotion and related fields.

### **HPRO 6902-6911 - Special Topics HPRO**

**Credit Hours:** (3) **Description** Current topics in health promotion. May be repeated with change in topic.

### **HPRO 7122 - Current Readings HPRO \*\***

**Credit Hours:** (3) Former: (HLTH 7122) **Description** Directed readings in health promotion; material selected to strengthen areas of study. May be repeated for maximum of 9 credits. Grades of A-F, or IP will be given.

### **HPRO 7142 - Seminar in HPRO**

**Credit Hours:** (1-3) Former: (HLTH 7142) **Description** Graduate seminar in health promotion. Grades of S, U, or IP will be given.

### **HPRO 7152 - Problems In HPRO**

**Credit Hours:** (3)

*Cross listing* ESMS 7152/NUTR 7152/PETE 7152 **Description** Independent study and/or research project on selected problems and issues.

**PREREQUISITE(S):** Permission of instructor Grades of A-F, or IP will be given.

### **HPRO 7182 - Health Promotion \*\***

**Credit Hours:** (3) Former: (FITW 7182) **Description** Introduction to broad and challenging academic discipline and profession of health promotion; explores theories of behavior and change, ethical and professional considerations, as well as fundamentals of program planning, implementation, and evaluation.

### **HPRO 7183 - Lifestyle/Wellness/Disease \*\***

**Credit Hours:** (3) **Description** Effect of physical activity, physical fitness, and other lifestyle behaviors on health and prevention or delay of selected chronic diseases.

### **HPRO 7702 - Contemporary Hlth Issue**

**Credit Hours:** (3) Former: (HLTH 7702) **Description** (HLTH 7702). Extensive examination of timely and important issues in the health promotion area.

### **HPRO 7703 - Life Phys Act & Hlth**

**Credit Hours:** (3) **Description** Introduces classroom health promotion, including approaches to policy making, program development and implementation, practice of self-care, behavioral and attitudinal change, and health enhancement.

### **HPRO 7704 - Int Hlth Beh Evdy Life**

**Credit Hours:** (3) **Description** Examines theories of behavior change, barriers to behavior change, how behaviors and individual risk factors affect chronic disease, how our environment affects health behaviors, and how to critique health information in order to synthesize nutrition, activity, and healthy behavior.

### **HPRO 7710 - Prog/Event Planning for HPRO \*\***

**Credit Hours:** (3) **Description** Introduction to program promotion techniques and event planning strategies; focuses on techniques and requirements for planning and conducting health promotion campaigns and special events such as meetings, corporate events, professional conferences, community functions, state/national initiatives, and sponsorships.

### **HPRO 7712 - Epidemiology \*\***

**Credit Hours:** (3) Former: (HLTH 7712) **Description** Introduction to selected diseases of special concern in public health practice with emphasis on epidemiologic models and methods.

### **HPRO 7722 - Hlth Intrvntn Thry/Apps \*\***

**Credit Hours:** (3) Former: (HLTH 7722) **Description** Examines an array of health theories and their applications to relevant health problems and prevention-intervention programs; these theoretical frameworks will be critiqued in some depth.

### **HPRO 7732 - Random Cln Trial/HS**

**Credit Hours:** (3) **Description** Provides thorough grounding in planning and executing randomized clinical trials pertaining to design, conducting, evaluation, and resource acquisition. **PREREQUISITE(S):** EDPR 7523 , EDPR 7541 or permission of instructor

### **HPRO 7780 - Health Counseling \*\***

**Credit Hours:** (3) **Description** Introduces clinical counseling techniques focusing on the development and application of basic health counseling and lifestyle coaching skills. Self-evaluation, giving and receiving feedback and reflection upon the development of clinical skills and ethical tendencies is an essential part of this course.

### **HPRO 7790 - Program Management in HPRO\*\***

**Credit Hours:** (3) **Description** Concepts and practice of the structure and functions of health promotion programs. Provides a foundation for various project direction skills, including planning, implementation, leadership, management

(time, risk, and financial), quality assurance, evaluation, dissemination, and maintenance of health programs.

### **HPRO 7800 - Internship in HPRO \*\***

**Credit Hours:** (3-6) **Description** Directed field experience focusing on development of knowledge, skills, and techniques needed to function as health promotion specialist in public or private settings. Grades of S, U, or IP will be given.

### **HPRO 7902-7911 - Special Topics HPRO**

**Credit Hours:** (1-3) Former: (HLTH 7092-11) **Description** Current topics in health promotion. May be repeated with change in topic.

### **HPRO 7950 - Applied Project in HPRO \*\***

**Credit Hours:** (1-6) **Description** Scholarly capstone experience in which students integrate and apply discipline-specific knowledge, skills, and insights in developing a product related to their professional goals as approved by a three-person project committee. **PREREQUISITE(S):** Completion of 18 credit hours in the program of study with a minimum graduate GPA of 3.00 and permission of instructor. S,U, or IP will be given.

### **HPRO 8732 - Random Cln Trial/HS**

**Credit Hours:** (3) **Description** Provides thorough grounding in planning and executing randomized clinical trials pertaining to design, conducting, evaluation, and resource acquisition. **PREREQUISITE(S):** EDPR 7523 ,EDPR 7541, or permission of instructor.

## **Higher and Adult Education**

### **HIAD 7060 - Intrnshp Hi/Adult Ed \*\***

**Credit Hours:** (1-6) **Description** Work experiences in higher education institution or in adult education settings under supervision of practicing professional and university supervisor. May be repeated for maximum of 6 credits. Grades of S, U, or IP will be given. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor. Grades of S, U, or I will be given.

### **HIAD 7170 - Community Educ Administration**

**Credit Hours:** (3) **Description** Organizational aspects of community education programs, including administration and supervision of personnel and citizen-community participation in formulating, implementing, and evaluating community education programs. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor. Grades of A-F will be given.

### **HIAD 7171 - Adult & Conti Educ Admin**

**Credit Hours:** (3) **Description** Organization and administration of adult and continuing education, including adult remedial, vocational-technical, community outreach programs; administrative methods and materials appropriate to adult habits and needs; interpreting current legislation and research relating to adult and continuing education programs; planning, implementing, and evaluating strategies. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor. Grades of A-F will be given.

### **HIAD 7172 - Curri Planning in Adu Basic Ed**

**Credit Hours:** (3) **Description** Principles of curriculum building in application to adult basic education students. Grades of A-F will be given.

### **HIAD 7210 - Foundations of Academic Advising**

**Credit Hours:** 3 **Description** Comprehensive study of academic advising. Course content will cover historical evolution and theoretical foundations of academic advising. Strategies for advising traditional and non-traditional college students. **PREREQUISITE(S):** Enrollment in HIAD program or by permission of instructor.

### **HIAD 7300 - Advising the College Athlete**

**Credit Hours:** 3 **Description** This course is designed to provide students with an understanding of the role and strategies for academic advising with college athletes. It will examine a variety of sociological, psychological, academic, and cultural topics impacting collegiate student-athletes and personnel working with this population, while also addressing potential resources that target these areas.

### **HIAD 7403 - Rsrch Hghr/Adult Educ**

**Credit Hours:** (3) **Description** Current topics, research problems, new studies, and needed inquiries in higher and adult education. EDPR 7/8541, 7/8542, 8415, and 1 additional

methods course approved by advisor. Restricted to students enrolled in HIAD, LDPS, and CCTL programs by permission of instructor.

### HIAD 7404 - Supervised Research \*\*

**Credit Hours:** (1-6) **Description** Collaborative research with faculty within the major to include planning, design, management, analysis, and reporting of research. May be repeated for a maximum of 12 credit hours.

**PREREQUISITE(S):** Prerequisites: Minimum of 12 hours in major and permission of instructor. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 7410 - Overview Higher Educ \*\*

**Credit Hours:** (3) Former: (EDAS 7190-8190) **Description** Higher education in social and historical contexts; organization and administration of colleges and universities. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 7411 - Community Colleges \*\*

**Credit Hours:** (3) Former: (EDAS 7191-8191) **Description** History, philosophy, and changing mission of the community college; focus on administration, faculty, staff, and students; curriculum and services; funding, public relations, and the presidency. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 7415 - It Trends & Issues \*\*

**Credit Hours:** (3) **Description** Explores issues and trends in information technology for leaders of higher and adult education, involving readings, discussion, and hands-on web research related to IT planning and budget considerations, academic and administrative systems, management of IT professionals, and IT-induced change in various segments of education. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 7430 - The Professoriate

**Credit Hours:** (3) **Description** Faculties of U.S. colleges and universities, nature of their work in various types of institutions, academic reward system, and programs for continuing professional development. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 7440 - Stdnt Prsnl Svc High Ed \*\*

**Credit Hours:** (3) Former: (COUN 7613-8613) **Description** Activities, functions, relationships, and philosophy of student personnel services; historical developments and current trends in student personnel services in relation to changing concepts in higher education. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor. Grades of A-F will be given.

### HIAD 7441 - College Studnt/Culture

**Credit Hours:** (3) Former: (COUN 7672-8672) **Description** College student characteristics and differing life patterns in institutional perspective; variations in student and college cultures in types of institutions. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 7442 - College Student Dev \*\*

**Credit Hours:** (3) *Cross listing* (Same as COUN 7622-8622.) **Description** Comprehensive study of traditional and non-traditional college students; emphasis on identification of development needs. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 7443 - College Environments \*\*

**Credit Hours:** (3) *Cross listing* (Same as COUN 7623-8623) **Description** Person-environment interaction theories, campus ecology, impact of college environments on diverse student populations, and higher education environmental assessment techniques. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.  
**PREREQUISITE(S):** HIAD 7442-HIAD 8442

### HIAD 7444 - Multiculturalism Coll Camp \*\*

**Credit Hours:** (3) **Description** Develops knowledge and skills necessary for leadership in diverse educational backgrounds. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 7445 - Group Work in Stud Per

**Credit Hours:** (3) **Description** Information and experiential opportunities about working with groups for leaders in diverse educational settings. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **HIAD 7447 - Assessment in Higher Education**

**Credit Hours:** 3 **Description** Assessment is a framework for conducting practice in higher education and student personnel. Through assessment, all involved will be able to identify outcomes, determine priorities, assess effectiveness and use information to improve the practices and processes used to enact services and programs in higher education and student personnel. **PREREQUISITE(S):** Permission from the department of Leadership/Higher and Adult Education.

### **HIAD 7450 - College/Unvsty Curric**

**Credit Hours:** (3) Former: (HIAD 7200-8200) **Description** Structure, development, implementation, and assessment of curriculum in colleges and universities; historical and philosophical perspectives; major figures, emerging trends, and contemporary issues. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **HIAD 7452 - Developmental Educ**

**Credit Hours:** (3) Former: (HIAD 7204-8204) **Description** Developmental education programs in colleges and universities; focus on policy, administration, and instruction. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **HIAD 7510 - Overview Of Adult Educ \*\***

**Credit Hours:** (3) Former: (HIAD 7250) **Description** Historical development of adult education; scope of field, including non-formal, post-secondary education, and human resource development. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **HIAD 7511 - Admin/Govt Comm College**

**Credit Hours:** (3) **Description** Clinical examination of structure, governance, management, and institutional culture in the context of accepted administrative practice in the contemporary community college. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **HIAD 7512 - Dev Grant Proposals/Ldrsp Prog \*\***

**Credit Hours:** (3) Former: (HIAD 7256-8256) **Description** Adult leadership programs in various organizations, agencies, and groups as primary, supplementary, or complementary function; community relations and development in funding. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **HIAD 7530 - Continuing Prof Educ \*\***

**Credit Hours:** (3) **Description** Background and development of continuing education for professionals, including medicine, law, social work, psychology, dentistry, and education as well as other fields; examination of impetus and providers for such programs. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **HIAD 7541 - Issues/Trends Tchg Adults \*\***

**Credit Hours:** (3) Former: (HIAD 7201-8201) **Description** Teaching and learning in higher education and other educational settings; analysis of who our learners are and teaching approaches designed for diverse student populations. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **HIAD 7542 - Global/Compartv Issues Ldrshp \*\***

**Credit Hours:** (3) **Description** Cross-cultural and cross-national study of selected issues and problems in higher and adult education; examines role of education in promoting social, economic, and cultural change. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **HIAD 7543 - External Relations/Fundraising \*\***

**Credit Hours:** (3) **Description** Working with populations external to the organization, such as schools, organizations, community agencies, governments, and the media. Also, principles of fundraising, alumni development, and development campaigns. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **HIAD 7700-7710 - Special Topics in Higher and Adult Education**

**Credit Hours:** 0 **Description** Topics vary by semester, see online course listing.

### HIAD 8000 - Change Theory in Higher Educ

**Credit Hours:** (3) **Description** Focus on theories and techniques for helping higher education institutions to change. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 8060 - Intrnshp Hi/Adult Ed \*\*

**Credit Hours:** (1-6) **Description** Work experiences in higher education institution or in adult education settings under supervision of practicing professional and university supervisor. May be repeated for maximum of 6 credits. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor. Grades of S, U, or IP will be given.

### HIAD 8170 - Community Educ Administration

**Credit Hours:** (3) **Description** Organizational aspects of community education programs, including administration and supervision of personnel and citizen-community participation in formulating, implementing, and evaluating community education programs. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 8171 - Adult & Conti Educ Admin

**Credit Hours:** (3) **Description** Organization and administration of adult and continuing education, including adult remedial, vocational-technical, community outreach programs; administrative methods and materials appropriate to adult habits and needs; interpreting current legislation and research relating to adult and continuing education programs; planning, implementing, and evaluating strategies. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 8172 - Curri Planning in Adu Basic Ed

**Credit Hours:** (3) **Description** Principles of curriculum building in application to adult basic education students. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 8300 - Advising the College Athlete

**Credit Hours:** 3 **Description** This course is designed to provide students with an understanding of the role and strategies for academic advising with college athletes. It will

examine a variety of sociological, psychological, academic, and cultural topics impacting collegiate student-athletes and personnel working with this population, while also addressing potential resources that target these areas.

### HIAD 8400 - Writing for Publication

**Credit Hours:** (3) **Description** Learn about journals, tailoring articles to journals, writing a research article, working with editors and reviewers.

### HIAD 8401 - Higher Educ Adminstratn \*\*

**Credit Hours:** (3) Former: (EDAS 7192-8192) **Description** Role, function, organization, and administration of colleges and universities; roles of presidents and other administrators; variations in academic and student life in higher education; relationships with various constituencies; problems of practice and power.

### HIAD 8403 - Rsrch Hghr/Adult Educ \*\*

**Credit Hours:** (3) **Description** Current topics, research problems, new studies, and needed inquiries in higher and adult education.

### HIAD 8404 - Supervised Research \*\*

**Credit Hours:** (1-6) **Description** Collaborative research with faculty within the major to include planning, design, management, analysis, and reporting of research. May be repeated for a maximum of 12 credit hours.

### HIAD 8405 - Sem Higher/Adlt Educ

**Credit Hours:** (3) Former: (HIAD 7258-8258) **Description** (HIAD 7258-8258). Culminating experience for doctoral students; examination of current issues using cross-disciplinary perspectives derived from previous coursework. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 8406 - Designing Research in HIAD

**Credit Hours:** (3) **Description** This course focuses on the theoretical, conceptual, and procedural knowledge underpinning the designing of qualitative, quantitative, and mixed methods research in higher and adult education. **PREREQUISITE(S):** LEAD 8001, HIAD 8412, EDPR 8561 EDPR 8541, EDPR 8542 or equivalent, or permission of the instructor.

### HIAD 8410 - Overview Higher Edu \*\*

**Credit Hours:** (3) Former: (EDAS 7190-8190) **Description** Higher education in social and historical contexts; organization and administration of colleges and universities. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 8411 - Community Colleges \*\*

**Credit Hours:** (3) Former: (EDAS 7191-8191) **Description** History, philosophy, and changing mission of the community college; focus on administration, faculty, staff, and students; curriculum and services; funding, public relations, and the presidency. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 8412 - Hist/Policy Persp Hied

**Credit Hours:** (3) Former: (EDFD 7002-8002) **Description** Historical development of higher education in the United States; current higher education policy issues in relation to this development. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 8415 - IT Trends & Issues \*\*

**Credit Hours:** (3) **Description** Explores issues and trends in information technology for leaders of higher and adult education, involving readings, discussion, and hands-on web research related to IT planning and budget considerations, academic and administrative systems, management of IT professionals, and IT-induced change in various segments of education. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 8420 - Legal/Ethical Issues in HIAD \*\*

**Credit Hours:** (3) Former: (EDAS 8380) **Description** (EDAS 8380). Legal principles and significant legal constraints relating to institutions of higher education; emphasis on application of law to organizational structure, students, personnel, programs, property, and finance; analysis of current legal issues. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor. May be repeated for credit when topic varies

### HIAD 8422 - Higher Educ Finance \*\*

**Credit Hours:** (3) Former: (EDAS 8320) **Description** Financing of institutions in higher education; sources and

methods of securing funds; development of programs; procedures for budget development and analysis; other financial and economic aspects of higher education administration; analysis of current problems related to higher education finance. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor. **PREREQUISITE(S):** EDPR 7541/EDPR 8541 and EDPR 8542/EDPR 8542

### HIAD 8430 - The Professoriate

**Credit Hours:** (3) **Description** Faculties of U.S. colleges and universities, nature of their work in various types of institutions, academic reward system, and programs for continuing professional development. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 8440 - Stdnt Prsnl Svc High Ed \*\*

**Credit Hours:** (3) Former: (COUN 7613-8613) **Description** Activities, functions, relationships, and philosophy of student personnel services; historical developments and current trends in student personnel services in relation to changing concepts in higher education. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 8441 - College Studnt/Culture

**Credit Hours:** (3) Former: (COUN 7672-8672) **Description** College student characteristics and differing life patterns in institutional perspective; variations in student and college cultures in types of institutions. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 8442 - College Student Dev \*\*

**Credit Hours:** (3) *Cross listing* (Same as COUN 7622-8622.) **Description** Comprehensive study of traditional and non-traditional college students; emphasis on identification of development needs. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### HIAD 8443 - College Environments \*\*

**Credit Hours:** (3) **Description** (Same as COUN 7623-8623). Person-environment interaction theories, campus ecology, impact of college environments on diverse student populations, and higher education environmental assessment techniques. Restricted to students enrolled in HIAD, LDPS,



and CCTL programs or by permission of instructor.

**PREREQUISITE(S):** HIAD 7442/HIAD 8442

### **HIAD 8450 - College/Unvsty Curric**

**Credit Hours:** (3) Former: (HIAD 7200-8200) **Description** Structure, development, implementation, and assessment of curriculum in colleges and universities; historical and philosophical perspectives; major figures, emerging trends, and contemporary issues. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **HIAD 8510 - Overview of Adult Educ \*\***

**Credit Hours:** (3) Former: (HIAD 7250) **Description** Historical development of adult education; scope of field, including non-formal, post-secondary education, and human resource development. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **HIAD 8511 - Admin/Govt Comm College**

**Credit Hours:** (3) **Description** Clinical examination of structure, governance, management, and institutional culture in the context of accepted administrative practice in the contemporary community college. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **HIAD 8512 - Dev Grant Proposals/Ldrsp Prog \*\***

**Credit Hours:** (3) Former: (HIAD 7256-8256) **Description** Adult leadership programs in various organizations, agencies, and groups as primary, supplementary, or complementary function; community relations and development in funding. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **HIAD 8530 - Continuing Prof Educ \*\***

**Credit Hours:** (3) **Description** Background and development of continuing education for professionals, including medicine, law, social work, psychology, dentistry, and education as well as other fields; examination of impetus and providers for such programs. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **HIAD 8541 - Issues/Trends Tchg Adults \*\***

**Credit Hours:** (3) Former: (HIAD 7201-8201) **Description** Teaching and learning in higher education and other educational settings; analysis of who our learners are and teaching approaches designed for diverse student populations. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **HIAD 8542 - Global/Compartv Issues Ldrshp \*\***

**Credit Hours:** (3) **Description** Cross-cultural and cross-national study of selected issues and problems in higher and adult education; examines role of education in promoting social, economic, and cultural change. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **HIAD 8543 - External Relations/Fundraising \*\***

**Credit Hours:** (3) **Description** Working with populations external to the organization, such as schools, organizations, community agencies, governments, and the medial. Also, principles of fundraising, alumni development, and development campaigns. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **HIAD 8700-8710 - Special Topics in Higher and Adult Education**

**Credit Hours:** 0 **Description** Topics vary by semester, see online course listing.

## **History**

### **HIST 6020 - Internship In History**

**Credit Hours:** (1-12) **Description** Supervised internships working with various governmental agencies, private foundations, or businesses of interest to historians. May be repeated for a maximum of 12 hours credit, not more than 6 of which can be counted toward the satisfaction of degree requirements. Grades of A-F will be given.

### **HIST 6022 - Oral History**

**Credit Hours:** (3) **Description** Applied history covering oral history theory, research, and interviewing procedures.

## HIST 6050-6069 - Special Topics in History

**Credit Hours:** (1-3) **Description** Intensive study of selected topics in History.

## HIST 6074 - Topics in United States History

**Credit Hours:** 3.0 **Description** This course examines a subject in United States history selected by the instructor. Can be repeated twice for up to six credits. Standard Letter

## HIST 6101 - Early Modern Britain, 1485-1815

**Credit Hours:** 3 **Description** Surveys the history of Britain's rise as a great world power during the Early Modern period. Themes include the creation of the Tudor monarchy and the Reformation; the Glorious Revolution and the rise of party politics; and the American Revolution, abolition, and industrialization. At the end of the fifteenth century Britain was a "comparatively minor power whether judged in military or wider political terms." Yet, in just three hundred years, it became a global superpower, possessed of "the most advanced and dynamic economy, the soundest and strongest financial base, and formidable naval might," as the historian E.A. Wrigley put it. In this course we will consider why and how Britain transformed from a European backwater into one of the world's leading powers between 1485 and 1815. We will explore the sweeping political, social, religious, and economic changes that fueled that transformation, from the creation of the Tudor monarchy and the Reformation to the Glorious Revolution and the rise of party politics to the American Revolution, abolition, and the French Revolutionary wars.

## HIST 6102 - Modern Britain, 1815 - Present

**Credit Hours:** 3 **Description** Traces Britain's rise and fall as a global superpower. Themes include the making and unmaking of the British empire; the expansion of the franchise and the development of democratic politics; the creation of the welfare state; the post-World War II order; and historical memory of Britain's past. In this course we will explore Britain's rise and fall as a global superpower between 1815 and the present day. We will consider the making and unmaking of the British empire; British humanitarianism at home and abroad; the expansion of the franchise and the development of democratic politics in Britain; the creation of the British welfare state; Britain's role in the post-World War II order; and how Britain's past as a great imperial power is being remembered now, in the era of Brexit.

## HIST 6105 - War in the Ancient World

**Credit Hours:** (3) **Description** Development of warfare from 2000 BCE to 1200 CE, from Bronze Age to Mongol conquests; emphasis on Greek and Roman warfare; tactics, methods, strategies; theories of war and their historical development; attention to relationships between cultures, technology, influence of culture on war and war on society. Grades of S, U, or I will be given.

## HIST 6106 - War in the Modern World

**Credit Hours:** (3) **Description** Development of warfare from 1400 to the present; tactics, methods, and strategies; theories of war and their historical development with particular attention to relationships between cultures, changing technology, and the manner in which war has been conducted; purposes for which wars are fought. Grades of S, U, or I will be given.

## HIST 6140 - Modern France, 1815 to Present

**Credit Hours:** 3.0 **Description** This course is designed to introduce students to the history of modern France since 1815, tracing the histories of politics, culture, society, and values up to the present day. Topics include the Bourbon Restoration, the 1848 Revolution, the Belle Époque, the era of the Two World Wars, the French Empire, Decolonization and Multicultural France. Standard Letter

## HIST 6145 - History of Modern Germany

**Credit Hours:** (3) **Description** Germany from the Enlightenment to the present day. Topics include the Napoleonic era and its aftermath, 1848, German unification, socialism, nationalism, antisemitism, World War I, the Weimar Republic, the Third Reich, post-war liberal-democratic West Germany and communist East, and today's reunified Germany at the heart of the European Union. Grades of S, U, or I will be given.

## HIST 6151 - Habsburg Central Europe 1740-1918

**Credit Hours:** (3) **Description** The Habsburg Monarchy brought relative stability to a region that has since experienced ethnic cleansing, mass murder, and dictatorship. Starts with the Habsburg dynasty's efforts to centralize its authority and ends with WWI, which led to the collapse of the Monarchy and redrawing the borders of east central Europe.

### **HIST 6160 - Russia to 1917**

**Credit Hours:** (3) **Description** Russia from earliest times to 1917, with special emphasis on the rise of serfdom and autocracy and the evolution of the Revolutionary Movement. May be repeated.

### **HIST 6161 - Socialism: A History**

**Credit Hours:** 3 **Description** This course represents a historical overview of the history of socialism from its birth in the early nineteenth-century at the age of industrial revolution to the present. Although united by their quest for social justice, like any world-wide ideology, socialism should not be treated monolithically. I will focus on the diversity of socialist movements, from such reformist projects as social democratic "welfare socialism" in Sweden, Israeli kibbutzim, and Tanzanian ujamaa to such radical versions as Soviet Communism, Maoism in China, and Cuban Socialism. We will explore the historical split of socialism into social democracy and communism in the beginning of the twentieth century and examine the link between two world wars and the popularity of statist mobilization versions of socialism. We will also explore the transformation of the Left at end of the last century and attempts to regenerate the socialist creed. Last but not least, this course does not represent an endorsement of socialism or its debunking. Instead, I invite students to approach the subject historically and explore how and why this secular "faith" emerged and developed, why it captivated and inspired millions of people, why it eventually experienced a crisis, and how it has been readjusting itself to the challenges of past and present time.

### **HIST 6162 - Russia after 1917**

**Credit Hours:** (3) **Description** Detailed study of Russia/Soviet Union from the 1917 Bolshevik Revolution to its dissolution in 1991 and beyond. Major themes include the evolution of Soviet Communism, Soviet nationalities policies, Stalinism, World War II, Cold War, the fall of the USSR, and contemporary Russia, including an analysis of Putin's regime.

### **HIST 6213 - Women/Gender/Latin Amer**

**Credit Hours:** (3) **Description** Historical examination of the roles of women and gender in Latin America from colonial times to the beginning of the twentieth century.

### **HIST 6221 - 20th Century Latin Amr Rev**

**Credit Hours:** (3) **Description** Critical comparative examination of twentieth-century revolutionary movements in Latin America, focusing on Mexico, Guatemala, Cuba, and Chile.

### **HIST 6222 - Race/Class Latin America**

**Credit Hours:** (3) **Description** Examination of race and class in Latin America from colonial times to the present, focusing on development of racial, ethnic, and class identities, and their roles in economic, social, political, and cultural life.

### **HIST 6223 - Contemporary Latin America**

**Credit Hours:** (3)

**Description** This course gives students the opportunity to engage in major themes in the history of Latin America since World War II.

The approach is chronological and thematic and the major themes include: the Mexican and Cuban Revolutions; the Cold War; classic populism and new populist experiences; the emergence of working and middle classes; threats and challenges of democracy; economic crisis, poverty and exclusion; drug trafficking and migration; women in politics; and neo-liberalism and its discontents.

### **HIST 6260 - World Since 1945 \*\***

**Credit Hours:** (3) **Description** "Global ideological, economic, religious and political developments since World War II. Emphasizes globalization, decolonization and Cold War politics" to more accurately reflect course content and updated terminology in field.

### **HIST 6272 - Modern Middle East \*\***

**Credit Hours:** (3) **Description** Political, diplomatic, social, and religious developments in the Middle East from 1800 to present.

### **HIST 6276 - The Arab-Israeli Conflict**

**Credit Hours:** (3) **Description** Study of the conflict between Palestinians and Israelis through analysis of religious, social, political, and cultural developments from the 19th century until the present day. Topics include Zionism in late Ottoman Palestine, the creation of the Jewish state of Israel and of the Palestinian refugee crisis, the Lebanese Civil War, and numerous Arab-Israeli wars.

### **HIST 6277 - Ottoman Empire \*\***

**Credit Hours:** (3) **Description** Ottoman Empire people, geography, cultures, politics, administration, economy, and societies from its rise in the 13th century until its demise in 1922; major historiographical debates and literature related to the Ottoman Empire through primary and secondary sources, art, and literature. May be repeated when the content varies.

### **HIST 6283 - History/South Africa**

**Credit Hours:** (3) **Description** South Africa from human origins to present, emphasizing 19th and 20th century economic and political history, examined within larger context of events throughout entire southern African region and globally; Apartheid system and liberation ideologies such as socialism, Pan-Africanism, and Black Consciousness explored through study of primary documents, film, and music. May be repeated for credit when topic varies

### **HIST 6285 - Afro-Cuban History and Culture**

**Credit Hours:** (3) **Description** History and culture of Afro-Cubans from origins to the present with particular emphasis on the Cuban Revolution. Enrollment by permit only and restricted to participants in the Cuba study abroad program.

### **HIST 6288 - West Africa/Diaspora**

**Credit Hours:** (3) **Description** History of West Africans from the 15th century to the present, focusing on trans-Atlantic slave trade and African diaspora in the Americas; particular emphasis on economic and social history through study of primary documents, film, and music.

### **HIST 6289 - African Women's History**

**Credit Hours:** (3) **Description** Experiences of women throughout entire history of African continent, from human origins to present; covers major epochs in African history, diversity of continent, and theoretical issues related to gender through study of primary documents, fiction, and film.

### **HIST 6292 - Modern China 1800-Present \*\***

**Credit Hours:** (3)

### **HIST 6294 - Modern Japan 1800-Present \*\***

**Credit Hours:** (3)

### **HIST 6299 - Topics in Global History**

**Credit Hours:** 3 **Description** This course examines a subject in Global history selected by the instructor. Can be repeated twice for up to six credits

### **HIST 6324 - History and Archaeology**

**Credit Hours:** 3.0 **Description** This class examines how archaeology contributes to the writing of history and how non-textual material culture contributes to our understanding of the past. Using examples from a variety of cultures and time periods the methodology and history of archaeology will be explained for non-archaeology majors and many case studies will illustrate how scholars use archaeological sources in creating historical narratives. Standard Letter

### **HIST 6325 - Bronze Age Aegean**

**Credit Hours:** 3.0 **Description** Builders of labyrinths, bull-jumpers, monster-slayers, and semi-divine warriors, this course examines the rise and fall of Bronze Age Aegean societies and the aftermath of their collapse. Beginning at the start of the Bronze Age c. 3000 BCE and continuing through the end of the Greek Dark Age c. 750 BCE, the course explores political, social, and religious structures in Minoan, Mycenaean, and Dark Age Greek culture. It employs mythic texts, epic poetry, monumental architecture, and wide-ranging material culture to explore both the lived history of these period and the historical memory of the Bronze Age. Standard Letter

### **HIST 6326 - Imperial Egypt**

**Credit Hours:** 3.0 **Description** The New Kingdom era (1550-1100 BCE) transformed pharaonic Egypt and its relations with the outside world. During this imperial age, warrior pharaohs forged an empire stretching from Sudan in Africa to Syria and the borders of Turkey. Intensive military, diplomatic, economic, and cultural interactions with other civilizations transformed Egyptian society and culture. With new military technologies like the horse drawn chariot and composite bow, Egypt became a military superpower. An influx of foreign peoples brought religious, cultural, and economic change to the land along the Nile. We will explore the major historical issues and problems of this age, and the methodologies used by Egyptologists to reconstruct the history of this civilization. Standard Letter

## HIST 6327 - Life and Death in Ancient Egypt

### **Credit Hours:** 3.0 **Description**

Traversing the realms of the living and the dead, this course focuses on what it was like for the ancient Egyptians to live, grow old, die, and be born again in this complex and fascinating society. Surveys ancient Egyptian political, social, and religious structure as they relate to daily life. Explores topics of gender, identity, family structure, social hierarchy, labor, slavery, poverty, death, and burial in the Pharaonic period c. 3000 to 323 BCE. Standard Letter

## HIST 6329 - Imperial Rome

**Credit Hours:** 3.0 **Description** This course examines the history and culture of Ancient Rome's imperial age from the fall of the Republic to the 4th century after Christ (49 BCE – 400 CE). Augustus and his successors established a new imperial system centered on the rule of one man. Roman culture was highly urbanized with complex social structures. Topics include sexuality and family life, slavery, urban life, gladiators and spectacles and the rise of Christianity. Standard Letter

## HIST 6330 - Topics in Ancient History

**Credit Hours:** (3) **Description** This course examines a subject in ancient history selected by the instructor. Can be repeated twice for up to six credits. Standard Letter

## HIST 6331 - After Empire: Rome in the Dark Ages

**Credit Hours:** 3.0 **Description** This course offers a close analysis of the collapse and rebirth of the city of Rome, from 312 to 1517 CE. Students will learn the ins and outs of the city's remarkable urban landscape, and how it transformed from a place that could house a million people to a desolate place that held a few thousand by 550 CE. After demographic collapse, the city's new set of leaders, the popes, redeveloped Rome's fabric with a religious orientation. Participants will work closely with archaeological and written sources pertaining to the streets, buildings, and people of Dark Age Rome. Standard Letter

## HIST 6361 - Hist Byzantine Empire \*\*

**Credit Hours:** (3) **Description** Byzantine or East Roman Empire from 330 to 1453 and its influence on the Slavic, Turkic, and Islamic peoples.

## HIST 6380 - Renaissance and Reformation Europe, 1400-1650

**Credit Hours:** (3) **Description** Exploration of the European Renaissance and Reformation, including civic and Christian humanism; republicanism and despotism; the print revolution; the creation of new Protestant churches and the reform of the Roman Catholic Church; and the Reformation's impact on the development of early modern states and societies.

## HIST 6381 - The Enlightenment, 1650-1815

**Credit Hours:** 3 **Description** Considers the nature and impact of Enlightenment thought, including its role in both the invention of modern political freedom and the establishment of new forms of oppression; its justifications and critiques of empire; and its relationships to an age of global revolutions. The Enlightenment has been described as a "revolution of the mind" and also as a "crisis of the mind," a century when Europeans' understanding of themselves, their societies, and their place in the world was irrevocably transformed. In this course we will consider the nature of this intellectual and cultural revolution. Did Enlightenment thinkers invent modern political freedom or lay the groundwork for new forms of colonial oppression, slavery, and political terror? Did the Enlightenment justify empire or critique it? What role did religion and religious thought play in the Enlightenment? What was the relationship between the Enlightenment and the revolutions that convulsed the British, French, and Spanish empires at the end of the eighteenth century?

## HIST 6399 - Topics in European History

**Credit Hours:** 3 **Description** Topics in European History is designed to instruct you in a topic or area of Modern European history that reflects the research strengths and interests of our European faculty. Instead of reflecting established national boundaries or discrete temporal period, or striving for comprehensive coverage, like our standard European curriculum courses, Topics courses follow the interests and concerns of the instructor. Courses might cover a discrete historical event, like the Holocaust or 1989 and the end of the Cold War, or they might explore a particular topic across a longer time period, like modern intellectual and cultural history or the history of anti-Semitism. Whatever the subject, a Topics course will encompass the professor's particular area of expertise and research, introduce you to the methods and skills of a practicing historian, and emphasize advanced historical and historiographical skills reminiscent of what you would encounter in a history graduate program. A Topics course is reading and writing intensive and based on in-class discussion. Can be repeated twice for up to six credits. Standard Letter

**HIST 6440 - French Revolution \*\***

**Credit Hours:** (3) **Description** In-depth study of the origins, course, and outcome of the French Revolution (1789-1815). Topics include the Enlightenment and the decline of the Old Regime; the causes of the Revolution; democratization and radicalization; counter-revolution and dictatorship; the Napoleonic Wars; and the Revolution's place in the historiography and history of the modern world.

**HIST 6620 - Colonial America to 1783 \*\***

**Credit Hours:** (3) **Description** This course introduces students to the political, economic, and social processes that shaped early North America prior to the era of revolutions. Students will examine European colonizers and those they colonized, how they interacted and influenced each other, and how geography, demography, and disease shaped their lives, creating a "new world" for all. Students in this course will consider how power was shaped by ecology, technology, gender, and race and how the struggle for power resulted in conflicts among different groups of European colonists, Native people and colonists, and between colonists and various European crowns.

**HIST 6630 - New Nation/1783-1815 \*\***

**Credit Hours:** (3) **Description** This course introduces the political, economic, and social causes and outcomes of conflicts in North America from 1754-1815, learning what was revolutionary about the age of revolutions. Students will examine what it meant to be an American and a British subject and consider the motivations of a wide range of participants, including Native Americans, enslaved and free African Americans, and the fifth of the population who remained with Britain as Loyalists. The other great movements of the Age of Revolutions, notably the French, Haitian, and Latin American Revolutions will place the American Revolution in larger context.

**HIST 6640 - Jackson Amer 1815-1850 \*\***

**Credit Hours:** (3) **Description** N/a Standard Letter

**HIST 6680 - Emr Mod Am 1877-1914**

**Credit Hours:** (3)

**HIST 6701 - U S 1914 To W War II \*\***

**Credit Hours:** (3)

**HIST 6702 - U S Since W War II \*\***

**Credit Hours:** (3) **COREQUISITE(S):** ICL 7993

**HIST 6801 - Black Memphis**

**Credit Hours:** 3 **Description** This course will focus on the social and cultural, political, and economic roles of African Americans in Memphis from the early nineteenth century through the early twenty-first century. The course will place Memphis in the context of state, regional and national events, and will explore issues of race, class and gender both within African American communities and between African Americans and other populations in the city. We will first explore the early migrations of African Americans into Tennessee and into Memphis/Shelby County, the lifestyles of enslaved and free African Americans in the area; the impact of Civil War emancipations and migrations on social, political, and economic life in Memphis; African American communities that developed in the late nineteenth and early twentieth century; the impact of Progressivism on the city's black communities; the Civil Rights and Black Freedom movements in the city, and racial dynamics in contemporary Memphis.

**HIST 6823 - American Labor History**

**Credit Hours:** (3) **Description** Historical development of the labor movement in the United States; emphasis on social, economic, and political trends related to the labor movement. Grades of S, U, or I will be given.

**HIST 6824 - Business History**

**Credit Hours:** (3) **Description** Historical development of business in the United States; attention to social, economic, and political trends related to American business communities. May be repeated **COREQUISITE(S):** ICL 7993

**HIST 6831 - History American Family \*\***

**Credit Hours:** (3) **Description** Analysis of changes in family size and structure and relationships between family and society from colonial times to present.

**HIST 6851 - Hist Women In America \*\***

**Credit Hours:** (3) **Description** Economic, political, social, and intellectual history of women in the English American colonies and the United States. **COREQUISITE(S):** ICL 7993

**HIST 6853 - African American Women**

**Credit Hours:** (3) **Description** The social, political, economic, and cultural history of African American women from the sixteenth century to the present.

**HIST 6861 - Parks/People/Public Pol**

**Credit Hours:** (3) **Description** A comparative study of the history and administration of public land areas in the United States and of American conservation.

**HIST 6863 - Hist Childhood/America \*\***

**Credit Hours:** (3) **Description** Historical consideration of children and childhood in American society from early 17th century to present.

**HIST 6871 - U S Urban History \*\***

**Credit Hours:** (3) **Description** Development of American cities, including formation of local social, economic, and political institutions and impact of urbanization on US.

**HIST 6899 - Topics in African American History**

**Credit Hours:** 3.0 **Description** This course examines a subject in African American history selected by the instructor. Can be repeated twice for up to six credits. Standard Letter

**HIST 6900 - Topics in Women's/Gender History**

**Credit Hours:** 3.0 **Description** This course examines a subject in women's/gender history selected by the instructor. Can be repeated twice for up to six credits. Standard Letter

**HIST 6941 - Hist American Indian**

**Credit Hours:** (3) **Description** Role of the Indian in American history.

**HIST 7011 - Phil & Theory of History**

**Credit Hours:** (3) **Description** Speculative philosophy of history and recent problems in analytical philosophy of history.

**HIST 7012 - Directed Readings \*\***

**Credit Hours:** (1-3) **Description** Arranged on an individual basis between a student and a particular instructor, whose permission is required. Master's students may take a maximum of 3 hours (6 by petition), PhD students a maximum of 6 hours (12 by petition)

**HIST 7023 - Practicum in History**

**Credit Hours:** (3) **Description** Participation in a fieldwork project or other project supervised by an approval authority (University of Memphis faculty or directors from other institutions). Class is pass/fail and does not count toward the degree.

**HIST 7024 - Fieldwork in History**

**Credit Hours:** (3) **Description** Preparation for, participation in, and writing about a fieldwork or other research project supervised by an approved authority (UM faculty or directors from other institutions). Project planning such as grant writing and budgeting, and other assignments related to the project's goals are required.

**HIST 7025 - Principles&Practices Hist Ed \*\***

**Credit Hours:** (3) **Description** Explores the principles of history education, goals of student learning, and how to transform our classrooms into the kind active intellectual space that promotes those intellectual, analytical, and critical skills that will best prepare our students for life beyond the academy. Highly recommended for all graduate students. Required for graduate students prior to their first semester teaching their own course.

**HIST 7030-7039 - Topics in History**

**Credit Hours:** (3) **Description** Topics within periods or problems that cross periods or subject areas.

**HIST 7060 - Women/Gender Historiography**

**Credit Hours:** (3) **Description** Theory and historiography of the field using major theoretical writings, from American and non-American perspectives, and from racially different viewpoints.

**HIST 7061 - Studies Women/Gender Hist \*\***

**Credit Hours:** (3) **Description** May be repeated when the content varies.

### **HIST 7070 - Research Seminar \*\***

**Credit Hours:** (1-3) **Description** Emphasis on original research and writing in topics drawn from the fields generally covered by the Studies courses.

### **HIST 7100 - Global Historiography**

**Credit Hours:** (3) **Description** Formation, development, and importance of global/ subglobal systems over time, societal interactions, and factors that favor or hinder the formation, development, and decline of various kinds of society; significance of biological, cultural, linguistic, intellectual, political, social, and economic elements for large-scale historical development.

### **HIST 7101 - Studies Global History \*\***

**Credit Hours:** (3)

### **HIST 7120 - Studies English History**

**Credit Hours:** (3)

### **HIST 7160 - Studies Russian Hist \*\***

**Credit Hours:** (3)

### **HIST 7210 - Studies Latin Am Hist \*\***

**Credit Hours:** (3)

### **HIST 7270 - Studies Near East Hist \*\***

**Credit Hours:** (3)

### **HIST 7272 - Historiography Mod Middle East**

**Credit Hours:** (3) **Description** This seminar is designed to introduce graduate students to some of the most important ideas and debates in the field of modern Middle Eastern history (18th century to the present) and place those ideas and debates within the context of general historiographic trends.

### **HIST 7280 - Studies in African History**

**Credit Hours:** (3) Grades of S/U, IP will be given.

### **HIST 7290 - Studies Asian History**

**Credit Hours:** (3)

### **HIST 7310 - Ancient Historiography**

**Credit Hours:** (3) **Description** Examines scholarship of ancient history and controversial problems in the field with a view to developing a more sound historical methodology for reconstructing ancient history; usually focuses on Egypt, but may address another area of ancient history. May be repeated when focus area changes.

### **HIST 7320 - Studies Ancient Hist \*\***

**Credit Hours:** (3)

### **HIST 7370 - Studies Medv/Renai Hist \*\***

**Credit Hours:** (3)

### **HIST 7400 - Studies Early Mod Hist**

**Credit Hours:** (3)

### **HIST 7430 - European Historiography \*\***

**Credit Hours:** (3) **Description** Introduction to major themes, methodologies, and scholarly debates in European history; explores historiographic flashpoints represented in major texts that constitute key points of reference for scholars; usually focuses on Modern Europe, but may address other periods of European history. May be repeated when focus area changes.

### **HIST 7440 - Studies in Modern Europe \*\***

**Credit Hours:** (3)

### **HIST 7601 - US Historiography to 1877 \*\***

**Credit Hours:** (3) **Description** Reading seminar in early US history that explores historiographical debates and in-depth examinations of major themes and periods in American history to 1877.

### **HIST 7602 - US Historiography after 1877 \*\***



**Credit Hours:** (3) **Description** Reading seminar in modern US history that explores historiographical debates and in-depth examinations of major themes and periods in American history from 1877 to the present.

### **HIST 7650 - Studies U S Hist To 1877 \*\***

**Credit Hours:** (3)

### **HIST 7680 - Studies U S After 1877 \*\***

**Credit Hours:** (3)

### **HIST 7880 - Af Amer Historiography to 1800 \*\***

**Credit Hours:** (3) **Description** Introduces some of the most recent as well as standard scholarship on African American history before 1800; discussion of assigned core readings supported by written reports.

### **HIST 7881 - Af Amer Historiography: 19 ce**

**Credit Hours:** (3) **Description** Introduces some of the most recent as well as standard scholarship on 19th century African American history; discussion of assigned core readings supported by written reports.

### **HIST 7882 - Af Amer Historiography: 20ce**

**Credit Hours:** (3) **Description** Introduces some of the most recent as well as standard scholarship on African American history before 1800; discussion of assigned core readings supported by written reports.

### **HIST 7883 - Studies African Am Hist \*\***

**Credit Hours:** (3)

### **HIST 7884 - Af Amer History and Profession \*\***

**Credit Hours:** (3) **Description** Introduction to basic philosophical problems of recreating and understanding the African American past, to history of historical writing by African Americans and other scholars, and to practical skills needed by professional historians in this field.

### **HIST 7980 - Thematic Studies Amer \*\***

**Credit Hours:** (3)

### **HIST 7991 - Independent Readings**

**Credit Hours:** (1-12) **Description** Arranged on an individual basis for history students only.

### **HIST 7996 - Thesis \*\***

**Credit Hours:** (1-9) **Description** The student must write and defend satisfactorily a thesis on a subject approved by the major professor. Grades of S, U, or IP will be given.

### **HIST 8011 - Phil & Theory of History**

**Credit Hours:** (3) **Description** Speculative philosophy of history and recent problems in analytical philosophy of history.

### **HIST 8012 - Directed Readings**

**Credit Hours:** (1-3) **Description** Arranged on an individual basis between a student and a particular instructor, whose permission is required. Master's students may take a maximum of 3 hours (6 by petition), PhD students a maximum of 6 hours (12 by petition). Grades of A-F, or I will be given.

### **HIST 8023 - Practicum in History**

**Credit Hours:** (3) **Description** Participation in a fieldwork project or other project supervised by an approval authority (University of Memphis faculty or directors from other institutions). Class is pass/fail and does not count toward the degree.

### **HIST 8024 - Fieldwork in History**

**Credit Hours:** (3) **Description** Preparation for, participation in, and writing about a fieldwork or other research project supervised by an approved authority (UM faculty or directors from other institutions). Project planning such as grant writing and budgeting, and other assignments related to the project's goals are required.

### **HIST 8025 - Principles&Practices Hist Ed**

**Credit Hours:** (3) **Description** Explores the principles of history education, goals of student learning, and how to transform our classrooms into the kind active intellectual space that promotes those intellectual, analytical, and critical

skills that will best prepare our students for life beyond the academy. Highly recommended for all graduate students. Required for graduate students prior to their first semester teaching their own course.

### **HIST 8030-8039 - Topics in History**

**Credit Hours:** (3) **Description** Topics within periods or problems that cross periods or subject areas.

### **HIST 8060 - Women/Gender Historiography**

**Credit Hours:** (3) **Description** Theory and historiography of the field using major theoretical writings, from American and non-American perspectives, and from racially different viewpoints.

### **HIST 8061 - Studies Women/Gender Hist**

**Credit Hours:** (3) **Description** May be repeated when the content varies.

### **HIST 8070 - Research Seminar**

**Credit Hours:** (1-3) **Description** Emphasis on original research and writing in topics drawn from the fields generally covered by the Studies courses. May be repeated for credit when topic varies. Grades of S, U, or IP will be given.

### **HIST 8100 - Global Historiography**

**Credit Hours:** (3) **Description** Formation, development, and importance of global/ subglobal systems over time, societal interactions, and factors that favor or hinder the formation, development, and decline of various kinds of society; significance of biological, cultural, linguistic, intellectual, political, social, and economic elements for large-scale historical development.

### **HIST 8101 - Studies Global History**

**Credit Hours:** (3) Grades of S, U, or IP will be given.

### **HIST 8120 - Studies English History**

**Credit Hours:** (3) Grades of S, U, or IP will be given.

### **HIST 8160 - Studies Russian Hist**

**Credit Hours:** (3) S/U

### **HIST 8210 - Studies Latin Am Hist**

**Credit Hours:** (3) Grades of S, U, or IP will be given.

### **HIST 8270 - Studies Near East Hist**

**Credit Hours:** (3) Grades of S, U, or IP will be given.

### **HIST 8272 - Historiography Mod Middle East**

**Credit Hours:** (3) **Description** This seminar is designed to introduce graduate students to some of the most important ideas and debates in the field of modern Middle Eastern history (18th century to the present) and place those ideas and debates within the context of general historiographic trends.

### **HIST 8280 - Studies in African History**

**Credit Hours:** (3)

### **HIST 8290 - Studies Asian History**

**Credit Hours:** (3)

### **HIST 8310 - Ancient Historiography**

**Credit Hours:** (3) **Description** Examines scholarship of ancient history and controversial problems in the field with a view to developing a more sound historical methodology for reconstructing ancient history; usually focuses on Egypt, but may address another area of ancient history. May be repeated when focus area changes.

### **HIST 8320 - Studies Ancient Hist**

**Credit Hours:** (3)

### **HIST 8370 - Studies Medv/Renai Hist**

**Credit Hours:** (3)

### **HIST 8400 - Studies Early Mod Hist**

**Credit Hours:** (3)

### **HIST 8430 - European Historiography**

**Credit Hours:** (3) **Description** Introduction to major themes, methodologies, and scholarly debates in European history; explores historiographic flashpoints represented in major texts that constitute key points of reference for scholars; usually focuses on Modern Europe, but may address other periods of European history. May be repeated when focus area changes. May be repeated with a change in topic and content emphasis. See online class listings for exact topics. **COREQUISITE(S):** ICL 7993

### **HIST 8440 - Modern Europe**

**Credit Hours:** (3) May be repeated when topics change.

### **HIST 8601 - US Historiography to 1877**

**Credit Hours:** (3) **Description** Reading seminar in early US history that explores historiographical debates and in-depth examinations of major themes and periods in American history to 1877. May be repeated with change in topic and content emphasis. See online class listings for topics. **COREQUISITE(S):** ICL 7993

### **HIST 8602 - US Historiography after 1877**

**Credit Hours:** (3) **Description** Reading seminar in modern US history that explores historiographical debates and in-depth examinations of major themes and periods in American history from 1877 to the present.

### **HIST 8650 - Studies U S Hist To 1877**

**Credit Hours:** (3) **COREQUISITE(S):** ICL 7993

### **HIST 8680 - Studies U S After 1877**

**Credit Hours:** (3)

### **HIST 8880 - Af Amer Historiography to 1800**

**Credit Hours:** (3) **Description** Introduces some of the most recent as well as standard scholarship on African American history before 1800; discussion of assigned core readings supported by written reports.

### **HIST 8881 - Af Amer Historiography: 19 ce**

**Credit Hours:** (3) **Description** Introduces some of the most recent as well as standard scholarship on 19th century African American history; discussion of assigned core readings supported by written reports.

### **HIST 8882 - Af Amer Historiography: 20ce**

**Credit Hours:** (3) **Description** Introduces some of the most recent as well as standard scholarship on African American history before 1800; discussion of assigned core readings supported by written reports.

### **HIST 8883 - Studies African Am Hist**

**Credit Hours:** (3) Grades of S, U, or IP will be given.

### **HIST 8884 - Af Amer History and Profession**

**Credit Hours:** (3) **Description** Introduction to basic philosophical problems of recreating and understanding the African American past, to history of historical writing by African Americans and other scholars, and to practical skills needed by professional historians in this field. Grades of S, U, or IP will be given.

### **HIST 8980 - Thematic Studies Amer**

**Credit Hours:** (3)

### **HIST 8990 - Reading for/Writing Comps**

**Credit Hours:** (1-12) **Description** Arranged on an individual basis for history students only. May be taken only at the end of coursework to fulfill the requirements for the PhD. Grades of S, U, or IP will be given.

### **HIST 8991 - Independent Readings**

**Credit Hours:** (1-12) **Description** Arranged on an individual basis for history students only. May be repeated. **NOTE:** History majors may not use this course to fulfill degree requirements.

### **HIST 9000 - Doctoral Dissertation**

**Credit Hours:** (1-12) **Description** No more than 12 hours may count toward the degree.

## Hospitality and Resort Management

### HPRM 6020 - Foundations of Project Management for the Hospitality Industry

**Credit Hours:** 3 **Description**

This course is intended to cover most of the fundamental aspects of modern Project Management, both managerial and technical, as well as to give the students direct experience in implementing appropriate tools and techniques specific to the hospitality industry. By the end of this course, students should have a mastery of the basic theory and practice of Project Management, as described by the core knowledge modules (Simultrain®). 0 \$60 per credit hour No

**PREREQUISITE(S):** N/A **COREQUISITE(S):** N/A  
**PREREQUISITE(S) or COREQUISITE(S):** N/A

### HPRM 6320 - Hospitality Services Mktg

**Credit Hours:** (3) **Description** Principles and models of services marketing with focus on applications to hospitality services industry; expansion of traditional marketing mix variables into additional development of hospitality service concepts, marketing plans, and service quality assessments.

### HPRM 6331 - Adv Resort/Lodging Management

**Credit Hours:** (3) **Description** Issues, theories, and best practices of resort and lodging industry. May be repeated for a maximum of 9 credit hours.

### HPRM 6340 - Information Technology HPRM

**Credit Hours:** (3) **Description** Framework for information technology, systems development methodologies, and strategic information systems planning; current issues relating to the hospitality industry; focus on using information technology in networked environment to achieve organizational goals and objectives.

### HPRM 6350 - Properties Develomnt/Planning

**Credit Hours:** (3) Former: (7020) **Description** Problems and opportunities inherent in developing and planning resort and hospitality facilities; sequence of property development, conceptual and space planning, design criteria, and construction management; establishing appropriate facilities

requirements, understanding industry practices, and implementing properties decisions with integrated design, operations, financial and real estate framework.

### HPRM 7020 - Analz/Decision-Mkng in Hosp

**Credit Hours:** (3) **Description** This course will examine how organizations in the hospitality industry can use analytics to make better decisions to solve practical industry problems.s. Analytics involves the use of data and data analysis to make fact-based decisions. This class will address the use of data as a tool for project development decision-making and for strategic success. It will focus on the collection, ensure success. Special emphasis will be placed on entrepreneurial decision-making.

### HPRM 7111 - Hospitality Grad Study Seminar

**Credit Hours:** (1) Former: (7029) **Description** The course will consist of readings, projects, case studies, and **PREREQUISITE(S):** Psychology graduate student or permission of instructor.

### HPRM 7141 - Experiential Learning Credit

**Credit Hours:** (1-9) **Description** A systematic process for evaluating and credentialing graduate-level learning gained in a variety of contexts. Students will provide documentation of graduate-level knowledge and skills garnered in nontraditional settings to expert faculty reviewers.

### HPRM 7152-7160 - Special Topics in Hospitality

**Credit Hours:** (1-3)

### HPRM 7200 - Hospitality Studies Seminar

**Credit Hours:** (2) **Description** This seminar is designed to provide an orientation for new graduate students who have been admitted to the Hospitality management program about graduate studies. Most students in this course are either beginning MS students in the hospitality management program. The focus of all course activities, therefore, is on familiarizing the student with graduate studies and requirements for a MS degree in hospitality management.

### HPRM 7320 - Advanced Hospitality Marketing \*\*

**Credit Hours:** (3) Former: (7030) **Description** The course provides an overview of the function of marketing as it relates to the hospitality industry. Important topics include marketing concepts, service characteristics, marketing environment and intelligence, marketing research, marketing mix, segmentation, targeting positioning, distribution channels, and new media marketing techniques. Special emphasis will be placed on the analysis of the marketing environment and the diversity of marketing practices used by hospitality marketers in today's global market place.

### **HPRM 7331 - Hospitality Services Op Mgmt** \*\*

**Credit Hours:** (3) **Description** Theory, application, and understanding of hospitality services operations, methods and practices. Integration of new trends and technology encompassing a global perspective.

### **HPRM 7340 - Strategic Pricing & Revenue Max**

**Credit Hours:** (3) Former: (7039) **Description** Strategies and tactics employed in pricing of hospitality goods and services. Principles and concepts of strategic pricing and strategic financial management for revenue maximization.

### **HPRM 7350 - Hospitality Asset Management**

**Credit Hours:** (3) **Description** Strategies and tools to manage hospitality investments including development of skills to build value at both portfolio and property levels. Topics include: hotel management contracts, franchise agreements, benchmarking and financial analysis, and global asset management. Restricted by Program or by Permit.

### **HPRM 7413 - Employee Development Issues** \*\*

**Credit Hours:** (3) **Description** This course is designed for students of general hospitality management, rather than for specialists in human resource management. This course will introduce you to the major issues associated with managing people in the context of the global marketplace.

### **HPRM 7421 - Legal and Sustainability Issues in Hospitality**

**Credit Hours:** (3) **Description** This course covers the basics of hospitality facility management and sustainable development and operations. The course will cover building systems equipment, engineering management functions, asset management views and capital project execution. Sustainability issues will cover a broad range of issues ranging from the legal environment, global certifications to tactical green activities that all hospitality operations should consider while developing on a global scale. After completing the course, the students should be fully aware of the issues related to facility management as well as sustainable principles, practices and policies pertaining to the hospitality industry.

### **HPRM 7442 - Adv Strtg Mgmt in Hosp**

**Credit Hours:** (3) **Description** Capstone experience with strategic decision-making principles in hospitality/tourism. Application of skills, knowledge and understanding of areas of concern for formulating and implementing operational strategies.

### **HPRM 7651 - Drv Sales & Rev in Hosp**

**Credit Hours:** (3) **Description** This class revolves around the verification and application of marketing concepts that were taught in prior marketing courses. If you have forgotten these basic concepts, reacquaint yourself with them. Marketing directly relates to revenues, sales, and profitability. The tools used can directly or indirectly affect these outcomes. Within marketing there are very few singularly "best" solutions. Far too many students feel marketing is just advertising: it is not. This course will help fine tune already existing skill sets. It is vital that you realize hospitality companies expect stellar writing and presentation skills as well as statistical and marketing related tools. They also want people who know what is happening in the hospitality marketplace today. To help in this expectation you will read many articles related to the business industry from various sectors including the hospitality industry.

### **HPRM 7870 - Res. & Data Analysis in Hosp**

**Credit Hours:** (3) **Description** This course aims to provide an understanding of the value and limitations of business research. Students will be introduced to some key research methods and design issues. This course will also provide a survey of research methodology currently used in the field of hospitality administration and management. In addition to learning basic research methods and approaches, the student will relate these items to the analysis of projects and learn of

existing research problems confronting administrators and managers.

### **HPRM 7911 - Hospitality Grad Internship**

**Credit Hours:** (3) **Description** Hospitality Internship is a specialized class where graduate students enrich their education through experiential learning at a hospitality organization or sites approved by the KWS. Prior to beginning the internship, students must complete the required internship application form, submit a detailed description of their planned activities and educational objectives for the internship, and make arrangements with an internship site to host them for the internship. In order to pass the internship, students must fulfill their original educational objectives, receive a favorable review from their internship supervisor, and submit all required assignments.

### **HPRM 7950 - Applied Project in Hospitality**

**Credit Hours:** (3) **Description** Scholarly capstone experience in which students integrate and apply discipline-specific knowledge, skills, and insights in developing a product related to their professional goals as approved by a three-person project committee. **PREREQUISITE(S):** Completion of 18 credit hours in the program of study with a minimum graduate GPA of 3.00 and permission of instructor.

### **HPRM 7996 - Thesis**

**Credit Hours:** (1-6) **Description** Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Coordinator of Graduate Programs. Grades of S, U, or IP will be given.

## **Institute for Intelligent Systems**

### **IIS 6010-6015 - Special Topics in Intelligent Systems**

**Credit Hours:** (1-3) **Description** Topics vary by semester, see online class schedule listing.

### **IIS 6503 - Independent Studies**

**Credit Hours:** 1-3 **Description** Directed independent study. May be repeated for up to 9 hours but only 6 hours with a single instructor.

### **IIS 6511 - Introduction to Applied Computational Linguistics**

**Credit Hours:** 3 **Description** Understand how to explore, model, and reason about linguistic data. Identify categories of linguistic problems and apply and extend existing methods to address these problems. The course is intended for students with little or no programming experience from any major. Programming in the course will focus on libraries in Python rather than core algorithms (as in COMP 7/8780). Standard Letter

### **IIS 7615 - Special Problems**

**Credit Hours:** 1-3 **Description** Directed independent study. May be repeated for up to 6 hours.

### **IIS 8615 - Special Problems**

**Credit Hours:** 1-3 **Description** Directed independent study. May be repeated for up to 6 hours.

## **Instruction and Curriculum Leadership**

### **ICL 6121 - Libr Mtrl Yng Peop/Adlts**

**Credit Hours:** (3) **Description** Evaluation and selection of books and related library materials for leisure interests and curriculum needs of young people and adults from junior high school up; intensive reading, introduction to selection criteria, bibliographic aids, authors and illustrators, and types of literature and information books.

### **ICL 6761 - Aerospace Ed In Schools**

**Credit Hours:** (3) **Description** Consideration of aerospace content and flight experiences; emphasizes classroom applications.

### **ICL 6762 - Adv Aerospace Ed Schls**

**Credit Hours:** (3) **Description** Theory, principles, and practices related to the historical development of aerospace, with emphasis on both civilian and military uses of aerospace capabilities; appropriate utilization of aerospace research, concepts, and spinoffs" for instructional purposes at all grade levels. **PREREQUISITE(S):** ICL 6761

### **ICL 6950-6959 - Special Topics in Curriculum and Instruction**

**Credit Hours:** (1-3) Former: (CIED 6950-59) **Description** Designed to allow for study of current topics in the areas of curriculum and instruction at all levels. May be repeated with a change in topic and content emphasis.

### **ICL 7000 - Analysis Pract Teach I**

**Credit Hours:** (3) **Description** Analysis of research on instruction and teaching practices; implementation of research based on strategies of developing instruction, facilitating, and assessing student learning. Field Experience: 4 hours.

### **ICL 7001 - Fund Of Curriculum**

**Credit Hours:** (3) **Description** Principles of organizing and developing the curriculum and curriculum directions, trends, and patterns.

### **ICL 7002 - Curriculum Leadership**

**Credit Hours:** (3) **Description** Application of curriculum and leadership theory to modern educational practices; emphasis on developing leadership styles to ensure implementation.

### **ICL 7003 - Curric Design/Evalatn**

**Credit Hours:** (3) **Description** Considers a variety of curriculum designs and their implications for educational practice.

### **ICL 7004 - Innovative Curricula**

**Credit Hours:** (3) **Description** Generic issues, problems, processes, and strategies relative to changes occurring with the implementation of innovative curricula.  
**PREREQUISITE(S):** ICL 7002,7050

### **ICL 7008 - Sem Curric Improvement**

**Credit Hours:** (3) **Description** An introduction to curriculum decision-making; includes curriculum development as a social process, issues and trends, theories and techniques of curriculum leadership, and translations of curriculum designs into practice.

### **ICL 7010 - Analysis Pract Teach II**

**Credit Hours:** (3) **Description** Intensive, interdisciplinary, and integrative study of models of teaching, curriculum assessment and evaluation, reading in content area, mainstreaming, multicultural concerns, and instructional technology; emphasis on theory, research, and skills through simulations and microteaching. **PREREQUISITE(S):** ICL 7000

### **ICL 7020 - Prof Develop Semnr I**

**Credit Hours:** (1-3) **Description** Interpersonal and group process skills needed for teaching.

### **ICL 7021 - Prof Develop Semnr II**

**Credit Hours:** (1-3) **Description** Specialty teaching area in pedagogical skills application.

### **ICL 7022 - Prof Develop Semnr III**

**Credit Hours:** (1-3) **Description** Teacher roles, professional relationships, and professional development.

### **ICL 7030 - Assessment & Evaluation \*\***

**Credit Hours:** (3) **Description** Test construction and methods of evaluation; emphasis on teacher made tests, standardized tests, test administration, test data management, interpretation and application of test data to instructional decisions, and reporting test results to students and parents.

### **ICL 7032 - Classroom Management**

**Credit Hours:** (2) **Description** Managing classroom environment; emphasis on constructive management techniques. Application of knowledge of human development and teaching and learning principles to development of classroom management systems.

### **ICL 7040 - Integrated Tchg Strtgy**

**Credit Hours:** (3) **Description** Curriculum, methods, and materials for teaching mathematics, science, and social studies to elementary school students.

### **ICL 7051 - Simulation**

**Credit Hours:** (1-3) **Description** Surveying, analyzing, and designing simulation activities appropriate for classroom situations; individual and group participatory activities.

### ICL 7054 - Creativity Tchg/Curric

**Credit Hours:** (3) **Description** Instructional strategies relevant to development of creative potential; activities include problem-solving, metaphoring, inventing, synectics, evaluation, questioning, brainstorming, creative writing and thinking, and spontaneity.

### ICL 7058 - Values Education

**Credit Hours:** (3) **Description** Major movements related to values education and analysis of strategies applicable to educational settings.

### ICL 7059 - Models of Instruction \*\*

**Credit Hours:** (3) **Description** Theory and research for instructional planning and assessing of selected models of instruction.

### ICL 7080 - Instr Multiethnic Schl

**Credit Hours:** (3) **Description** Survey, analysis, and design of curriculum and instruction that considers the multiethnic nature of students in the urban school and facilitates their academic and social growth. Field experience: 10 hours.

### ICL 7082 - Seminar in Urban Education

**Credit Hours:** (3) **Description** This course uses various forms of seminar discussion, graduate inquiry, and creative engagement to provide a focused deliberative environment to study urban education issues and trends.

### ICL 7100 - Fld Exp Intro Teaching

**Credit Hours:** (1) **Description** Structured observation and participation in schools; emphasis on management and instructional issues. Field experiences: 10 hours.

### ICL 7103 - Tchg Hlth Phy Act Nutr

**Credit Hours:** (3) **Description** Instructional techniques, curriculum, and materials for teaching health, physical activity, and nutrition in grades K-6; field experience 10 hours. **PREREQUISITE(S):** Admission to TEP or a licensed teacher and HPRO 7703, HPRO 7704, NUTR 7209

### ICL 7104 - Accom Div Urb Lnrs

### **Credit Hours:** (3) **Description**

Accommodations/modifications for diverse urban preK-13 students with individual needs in urban regular education classrooms, emphasizing students at risk for failure and focusing on creation of appropriate accommodations, differentiating instruction, and role of regular education teachers and education support personnel.

### ICL 7105 - Lang/Comm Inclusive Classrm \*\*

**Credit Hours:** (3) **Description** Instructing students with typical and exceptional communication needs. Includes interpreting speech/language assessment reports and designing instruction. Also use of augmentative and alternative communication devices and working with non-native English speaking students. Field Experience: Required.  
**PREREQUISITE(S):** SPED 7000 or equivalent

### ICL 7106 - Prof/Eth Prac Inclusive Class \*\*

**Credit Hours:** (3) **Description** Education policy and practice: accountability, ethics, advocacy, and social challenges. Working with families and community stakeholders is highlighted. Instructional planning includes creating individual education plans, individual family service plans and transition planning. **PREREQUISITE(S):** SPED 7000 or equivalent.

### ICL 7130 - Elem School Curriculum

**Credit Hours:** (3) **Description** Analysis of curriculum theories, materials, and practices as they affect the child's potential and growth.

### ICL 7132 - Catalog/Classification \*\*

**Credit Hours:** (3) **Description** Introduction to principles and techniques of cataloging and classification of books and other library materials.

### ICL 7133 - School Library Admin \*\*

**Credit Hours:** (3) **Description** Organization and administration of elementary and secondary school libraries, including standards, evaluation, facilities, equipment, support, student assistants, and relationship to instructional and guidance programs of school.

### ICL 7134 - Internet in the School Library \*\*



**Credit Hours:** (3) **Description** Professional applications of instructional and communications technologies in the school library environment; the focus is on enhancing prospective school library information specialists' technological knowledge and skills in using the Internet.

### **ICL 7138 - Sem In Elem Educ**

**Credit Hours:** (3) **Description** Analysis of contemporary issues and trends in elementary education.

### **ICL 7151-7159 - Special Topics in Instruction and Curriculum Leadership**

**Credit Hours:** (1-3) **Description** Topics are varied.

### **ICL 7160 - Mdrn Meth Scndry Educ**

**Credit Hours:** (3) **Description** Secondary school teaching and how the secondary school can perform its role most effectively.

### **ICL 7161 - Methods/Middle School Science**

**Credit Hours:** (3) **Description** Middle level principles, techniques, and materials for teaching science to students in grades 4-8; Clinical/field experience required.  
**PREREQUISITE(S):** Admission to TEP

### **ICL 7162 - Methods/Middle School Lang**

**Credit Hours:** (3) **Description** Middle level principles, techniques, and materials for teaching language arts to students in grades 4-8; Clinical/field experience required.  
**PREREQUISITE(S):** Admission to TEP

### **ICL 7163 - Methods/Middle School Math**

**Credit Hours:** (3) **Description** Middle level principles, techniques, and materials for teaching math to students in grades 4-8; Clinical/field experience required.  
**PREREQUISITE(S):** Admission to TEP

### **ICL 7164 - Methods/Middle School Soc Stdy**

**Credit Hours:** (3) **Description** Middle level principles, techniques, and materials for teaching social studies to students in grades 4-8; Clinical/field experience required.  
**PREREQUISITE(S):** Admission to TEP

### **ICL 7165 - The Middle School**

**Credit Hours:** (3) **Description** Investigation of emerging concepts of the middle school and trends in classroom procedures and curriculum.

### **ICL 7168 - Semnr Secondary Educ**

**Credit Hours:** (3) **Description** Analysis of problems, current issues, and trends in secondary education.

### **ICL 7172 - Spec Mthds Soc Stu Educ \*\***

**Credit Hours:** (3) **Description** Critical analysis and research on significant issues in the field of secondary social studies education.

### **ICL 7174 - Spec Mthds For Lang Ed \*\***

**Credit Hours:** (3) **Description** (Same as LING 7174). Examines theoretical and practical issues relating to teaching of foreign languages K-12 through lectures, reading of current literature, class discussion, guest speakers, etc.; explores role of context in comprehension and learning, listening, reading, oral proficiency, writing, testing, culture, and curriculum. Field Experience: 8 hours. **PREREQUISITE(S):** Admission to TEP

### **ICL 7300 - Cont Issues Lang Arts \*\***

**Credit Hours:** (3) **Description** Analysis of current trends and issues in the teaching of language arts: theory and research related to teaching models and their application in the language arts.

### **ICL 7301 - Literature in PreK-12 School \*\***

**Credit Hours:** (3) **Description** Methods of teaching children's and adolescents' literature in the PreK-12 school environment, including storytelling, dramatization, choral speech work, fiction, nonfiction, drama, and poetry.

### **ICL 7302 - Tchg Lit To Adolescents \*\***

**Credit Hours:** (3) **Description** Methods of teaching adolescent literature including fiction, non-fiction, drama, and poetry.

### **ICL 7303 - Eng/Lan Comp Secnd Schl \*\***

**Credit Hours:** (3) **Description** Emphasis on developing and implementing a sequential curriculum in secondary school language and composition. Field Experience: 8 hours.  
**PREREQUISITE(S):** Admission to TEP

### **ICL 7305 - Mphs Urban Wrtnng II**

**Credit Hours:** (3) **Description** Prepares K-12 teachers to improve their writing practices and assume a leadership role in writing instruction in their schools.

### **ICL 7308 - Seminar Engl/Lang Arts \*\***

**Credit Hours:** (3) **Description** Emphasis on oral and written language models and how these models can be used in the development of a student-centered language arts curriculum. K-12. Field Experience: 8 hours.

### **ICL 7309 - Dev Instructional Ldrs**

**Credit Hours:** (3) **Description** Application of development of instructional leaders, mentors and coaches within a school environment; emphasis on developing leadership styles to ensure implementation of multiple initiatives and support colleagues for personal growth

### **ICL 7310 - Supptng Cont Spec Inst**

**Credit Hours:** (3) **Description** Application of development of instructional leaders, mentors and coaches within a school environment; emphasis on developing instructional skills to support various coaches within a district

### **ICL 7500 - Advanced Mathematics in K-8 Schools**

**Credit Hours:** (3) **Description** Models of K-8 school mathematics instruction; history, philosophy, and research supporting those models. **PREREQUISITE(S):** Teacher Licensure

### **ICL 7501 - Elementary/Middle School Math Curriculum**

**Credit Hours:** (3) **Description** Issues and trends in elementary and middle school mathematics curriculum. Appropriate current reports of professional groups will be considered.

### **ICL 7502 - Teaching Mathematics Middle/Secondary Schools \*\***

**Credit Hours:** (3) **Description** Consideration of principles and techniques of teaching mathematics in middle and secondary schools, including study and evaluation of materials of instruction. Field experience: 8 hours.  
**PREREQUISITE(S):** Admission to TEP

### **ICL 7503 - Secndry Math Ed Curric \*\***

**Credit Hours:** (3) **Description** Analysis of the secondary mathematics curriculum as it relates to sound educational practices. May be repeated with a change in topics.

### **ICL 7504 - Methods Math Elem**

**Credit Hours:** (3) **Description** Instructional techniques, curriculum, and materials for teaching mathematics to elementary school students. Field Experience: 10 hours.  
**PREREQUISITE(S):** Admission to TEP

### **ICL 7505 - Advanced Workshop in K-8 Mathematics**

**Credit Hours:** 3 **Description** Issues and trends in K-8 mathematics education, with a particular focus on current standards and recommendations regarding mathematics education.

### **ICL 7506 - Advanced Topics in Mathematics Teaching & Learning**

**Credit Hours:** 3 **Description** Models of elementary and middle school mathematics teaching and learning. Focus on research involving students' mathematical thinking.

### **ICL 7508 - Sem Mathematics Educ \*\***

**Credit Hours:** (3) **Description** Study and discussion of selected mathematics education topics of concern or special interest. May be repeated with a change in topics.

### **ICL 7600 - Adv Science Elem**

**Credit Hours:** (3) **Description** Models of science instruction; history, philosophy, and research supporting these models.  
**PREREQUISITE(S):** Teacher licensure

**ICL 7601 - Elem Science Curriculum**

**Credit Hours:** (3) **Description** Examination of science curriculum materials; focus on procedures for evaluation of curriculum and materials and analysis of local curricula in science; includes techniques for conducting science workshops and in-service programs.

**ICL 7602 - Tchg Sci Scndry Schl \*\***

**Credit Hours:** (3) **Description** An examination and analysis of modern science teaching strategies in the secondary school; emphasis on information processing and classroom learning strategies. Field experience: 8 hours. **PREREQUISITE(S):** Admission to TEP

**ICL 7603 - Scndry Schl Sci Curr \*\***

**Credit Hours:** (3) **Description** Analysis of secondary science content and materials; emphasis on current concepts of the science curriculum and the selection of appropriate materials for teaching the various sciences.

**ICL 7605 - Methods Elem Science**

**Credit Hours:** (3) **Description** Instruction techniques, curriculum, and materials for teaching science to elementary school students. Field experience: 10 hours.  
**PREREQUISITE(S):** Admission to TEP

**ICL 7608 - Sem Science Education \*\***

**Credit Hours:** (3) **Description** A survey of selected problems and topics in science education.

**ICL 7650 - Adv Elem Soc Studies**

**Credit Hours:** (3) **Description** Advanced strategies for social studies instruction and history, philosophy, and research supporting those strategies. **PREREQUISITE(S):** Teacher licensure

**ICL 7652 - Tchng Soc Std Mid/Sec \*\***

**Credit Hours:** (3) **Description** Consideration of principles and techniques for teaching secondary social studies. Additional field hours required. **PREREQUISITE(S):** Admission to TEP

**ICL 7653 - Mid/Sec Soc Std Curric \*\***

**Credit Hours:** (3) **Description** Analysis of programs and curricular materials for secondary social studies education.

**ICL 7654 - Methods Elem Soc Studies**

**Credit Hours:** (3) **Description** Instruction techniques, curriculum, and materials for teaching social studies to elementary school students. Field experience: 10 hours.  
**PREREQUISITE(S):** Admission to TEP

**ICL 7655 - Constructivism & the New Social Studies \*\***

**Credit Hours:** 3 **Description** Historical examination and analysis of the development of new social studies curriculum and materials in the social studies classroom.

**ICL 7657 - Hist of Soc Stu Education \*\***

**Credit Hours:** (3) **Description** Historical examination and analysis of the development of social studies in education.

**ICL 7658 - Seminar Soc Stu Education**

**Credit Hours:** (3) **Description** Survey and evaluation of social and controversial issues and trends in the social studies education.

**ICL 7659 - Cold War Education \*\***

**Credit Hours:** (3) **Description** Historical examination and analysis of the development of American educational movements throughout the Cold War. **PREREQUISITE(S):** Admission to teacher education program and completion of MAT level one courses.

**ICL 7701 - Adv Wksp ICL:Urban Educ**

**Credit Hours:** (3) **Description** This course requires investigations of Urban Education issues in schools and topic of inquiry will change if course is repeated.

**ICL 7702 - Adv Topics in ICL:Urban Educ**

**Credit Hours:** (3) **Description** Current topics in areas of instruction and curriculum at advanced levels in Urban Education. This course addresses current research and issues in Urban Education school environments.

### ICL 7704 - Wksp/Nwspaper In Clasrm

**Credit Hours:** (3) **Description .**

### ICL 7705 - Adv Mgng Lrng Environ

**Credit Hours:** (3) **Description** Teacher's role in integrated approach to managing classroom's physical and behavioral learning environments, school curriculum, and pupil development and learning.

### ICL 7706 - Family/Comm Relations

**Credit Hours:** (3) **Description** Analysis of family, cultural, and community patterns in relation to the teacher's roles and responsibilities for building educational partnerships.

### ICL 7707 - Using Data to Inform Teaching

**Credit Hours:** (3) **Description** This course helps teachers gain knowledge and skill in using various forms of data to improve student learning and achievement. It includes data-driven teaching and decision making, data sources and measures, differentiating instruction, and action planning to guide instruction, curriculum and assessment.

### ICL 7709 - Urban Lrng Environment

**Credit Hours:** (3) **Description** Use of appropriate knowledge and skills for managing the total learning environment in school settings; emphasis on developing knowledge and skills that facilitate effective teaching through appropriate management techniques that are sensitive to the individual needs of students within culturally and economically diverse populations, and that encourage the involvement of parents and community leaders.

### ICL 7719 - Introduction to STEM Education

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**Credit Hours:** (3) **Description** This course will provide participants with an overview of STEM education and bring together mathematics and science ideas grounded in current curriculum standards for mathematics, science, and engineering education. The course will include the following topics: approaches to STEM education; introduction to the curriculum standards; the integration of technology and engineering; strategies for collaboration among STEM teachers; curriculum mapping and planning across STEM disciplines; equity in STEM; STEM competencies.

### ICL 7720 - STEM Curriculum Leadership

**Credit Hours:** (3) **Description** Focus on curriculum standards and trends in mathematics, science, and engineering education. Topics include: introduction to the standards; the relationship between curriculum and equity; implications of the standards for instructional practice; the integration of technology and engineering; and the alignment between standards and curriculum materials.

### ICL 7721 - STEM Teacher Development

**Credit Hours:** (3) **Description** Focus on theory and practice around STEM teacher learning and professional development. The course will explore research-based practices and models of STEM professional development.

### ICL 7722 - Teaching and Learning in STEM

**Credit Hours:** (3) **Description** Focus on student-centered instructional models with particular attention to approaches that integrate science, engineering, technology, and mathematics.

### ICL 7723 - Equity in STEM Education

**Credit Hours:** (3) **Description** Focus on the history of mathematics and science education as it relates to equity and opportunity to learn. Additional topics include: culturally relevant pedagogy in mathematics and science; STEM education in urban schools; strategies for teaching mathematics and science to linguistically diverse students; teaching for social justice; and technology and opportunity to learn.

### ICL 7730 - Found Librarianship \*\*

**Credit Hours:** (3) **Description** Introduction to librarianship as a profession and library as institution in cultural and political setting; influences of social issues, societal needs, professional organizations, and federal legislation on goals, ethics, organization, programs, and problems of libraries and librarians.

### ICL 7731 - Intro To Bibliography \*\*

**Credit Hours:** (3) **Description** Theory and purpose of bibliography as form of access to information; emphasis on general reference sources; introduction to principles, practices, and methods of reference service.

**ICL 7800 - Adv Clinical Practicum \*\***

**Credit Hours:** (3-9) **Description** Includes student teaching, supervised practicum, and other similarly organized professional experiences; designed to complement on-campus course study with actual on-site professional experience. **COREQUISITE:** ICL 7993. Grades of A-F will be given.

**ICL 7801 - Talented & Mently Gifted**

**Credit Hours:** (3) **Description** Historical and societal perceptions and definitions of the talented and mentally gifted individuals; their social, emotional and learning processes.

**ICL 7802 - Spec Populations/Gifted**

**Credit Hours:** (3) **Description** Examination of the nature and needs of gifted and talented students whose performance is affected by some condition interfering with optimal growth. **PREREQUISITE(S):** ICL 7801 or SPED 7801

**ICL 7803 - Intern Kindergarten**

**Credit Hours:** (3-9) **Description** Includes student teaching, supervised practicum, and other similarly organized professional experiences; designed to complement on-campus course study with actual on-site professional experience. Grades of S, U, or I will be given.

**ICL 7804 - Erly Chldhd Stu Tchg**

**Credit Hours:** (3-9) **Description** Includes student teaching experiences in both Pre-Kindergarten or Kindergarten, and Primary grades 1-3. **COREQUISITE:** ICL 7993. Grades of S, U, or I will be given.

**ICL 7805 - Intern Elem Schl**

**Credit Hours:** (3-9) **Description** Includes student teaching, supervised practicum, and other similarly organized professional experiences; designed to complement on-campus course study with actual on-site professional experience. Grades of S, U, or I will be given.

**ICL 7806 - Elem Student Tchg**

**Credit Hours:** (3-9) **Description** Includes student teaching, supervised practicum, and other similarly organized professional experiences; designed to complement on-campus

course study with actual on-site professional experience. **COREQUISITE:** ICL 7993. Grades of S, U, or I will be given.

**ICL 7807 - Intern Scndry Schl**

**Credit Hours:** (3-9) **Description** Includes student teaching, supervised practicum, and other similarly organized professional experiences; designed to complement on-campus course study with actual on-site professional experience. Grades of S, U, or I will be given.

**ICL 7808 - Clinical Teaching Semester \*\***

**Credit Hours:** (3-9) **Description** Full-time clinical placement appropriate to candidate's area of licensure providing opportunities to demonstrate professional competencies associated with successful teaching and student achievement. Capstone performance assessment required for successful completion. May be repeated for maximum of 12 hours **PREREQUISITE(S):** Admission to TEP, and passing all required licensure exams. **COREQUISITE(S):** ICL 7993

**ICL 7809 - Rdng Rsrch Practicum**

**Credit Hours:** (3)

**ICL 7810 - Teacher Leader Practicum**

**Credit Hours:** (3) **Description** The teacher leader practicum will focus on creating a school climate to strengthen student achievement by developing instructional supports. These supports may include the creation of instructional plans for struggling teachers, implementing professional learning communities and developing a year long professional development plan for a school

**ICL 7811 - Mthd Tchg Giftd/Ac Tltd**

**Credit Hours:** (3) **Description** Teaching strategies for fostering gifted behavior at preschool, elementary, and secondary levels; procedures and criteria of evaluation, curriculum sequences and guides, alternative strategies for curriculum development, the writing and implementing of individualized educational plans.

**ICL 7822 - Adv Mthd Giftd/Ac Tltd**

**Credit Hours:** (3) **Description** Examination of provisions of services to gifted students in other than traditional enrichment programs. Grades of A-F, or IP will be given.

### ICL 7850 - Suprvsn Student Tchg

**Credit Hours:** (3) **Description** Principles and techniques of student teaching supervision; designed for supervising teachers, administrators, coordinators of student teaching programs, and college personnel. Grades of A-F will be given.

### ICL 7912 - Fndtns/NBPTS Candidacy

**Credit Hours:** (3) **Description** Develops thorough understanding of National Board for Professional Teaching Standards, including performance-based assessments such as student work samples and reflection papers, as well as analyses of classroom teaching, classroom discourse, and learning through videotape analysis.

### ICL 7913 - St Tchg Mid Grds

**Credit Hours:** (3-9) **Description** Includes student teaching, supervised practicum, and other similarly organized professional experiences; designed to complement on-campus course study with actual on-site professional experience. **COREQUISITE:** ICL 7993. Grades of S, U, or I will be given.

### ICL 7950-7969 - Advanced Topics in Instruction and Curriculum

**Credit Hours:** (1-3) Former: (CIED 7950-59-8950-59)  
**Description** Current topics in areas of instruction and curriculum at advanced levels. May be repeated with change in topic and content emphasis.

### ICL 7953 - Writing for Academic Publicatn

**Credit Hours:** (3) **Description** Learning to master the discourses necessary to succeed in academic writing; focus on genres of academic writing; emphasis on strategies for successful academic work based on publication.

### ICL 7991 - Independent Study

**Credit Hours:** (1-9) **Description** Includes special problems, field studies, and other similarly organized professional experiences under the direct supervision of a faculty member within the department; emphasis on student planning, initiating, conducting, and completing independent studies, projects, etc., designed to meet programmatic goals and individual needs. Grades of A-F will be given.

### ICL 7992 - Master's Project \*\*

**Credit Hours:** (3) **Description** Designed as a culminating experience; direct participation is required for the successful completion of a field-study, on-site project or other classroom-based experience. This course must be taken during the semester the student will graduate. ID&T students must contact advisor before registering for Master's Project. **PREREQUISITE:** EDPR 7523 or EDPR 7521 and, for MAT and Licensure-Only students, completion of Student Teaching requirement. Grades of S, U, or I will be given. Grades of A-F, or IP will be given.

### ICL 7993 - Professional Seminar \*\*

**Credit Hours:** (3) **Description** An integrative capstone seminar for advanced post-baccalaureate teacher certification students; students will apply reflective, analytical, and critical thinking to selected issues regarding school curriculum, teaching methods, professional ethics, legal issues, leadership and advocacy, professional relations, communication, and problem solving.

### ICL 7994 - Developing Proposals

**Credit Hours:** (3) **Description** Procedures and techniques for development of research, project, and grant proposals; emphasis on development of proposal for research study or in response to funding request. May be repeated for a maximum of 6 credit hours for more advanced content

### ICL 7996 - Thesis

**Credit Hours:** (1-6) **Description** Prospectus must be approved by the faculty committee directing this research study. Application for writing thesis must be filed with the Director of Graduate Studies. Grades of S, U, or IP will be given.

### ICL 7999 - Experiential Learning Credit

**Credit Hours:** (1-12) **Description** Experiential Learning Credit (ELC) is a highly individualized process whereby students can use the learning outcomes that they have earned through a broad range of experiences to petition for college credit.

### ICL 8000 - Spec Culmn Experience

**Credit Hours:** (1-6) **Description** Thesis, internship, field study, or special project designed under direction of student's committee. Serves as capstone experience in Education Specialist Program. Grades of S, U, or I will be given.

### ICL 8002 - Curriculum Leadership

**Credit Hours:** (3) **Description** Application of curriculum and leadership theory to modern educational practices; emphasis on developing leadership styles to ensure implementation.

### ICL 8003 - Curric Design/Evalatn

**Credit Hours:** (3) **Description** Considers a variety of curriculum designs and their implications for educational practice.

### ICL 8004 - Innovative Curricula

**Credit Hours:** (3) **Description** Generic issues, problems, processes, and strategies relative to changes occurring with the implementation of innovative curricula.

### ICL 8005 - The Nature of Knowledge

**Credit Hours:** (3) **Description** This course will be offered to doctoral students to provide an overview and introduction to epistemology and the philosophical perspectives concerning the nature and acquisition of knowledge and belief. It is designed to increase the research skills of graduate students and to position them to conduct research grounded in understandings of theory, knowledge, and scholarship.

### ICL 8008 - Sem Curric Improvement

**Credit Hours:** (3) **Description** An introduction to curriculum decision-making; includes curriculum development as a social process, issues and trends, theories and techniques of curriculum leadership, and translations of curriculum designs into practice.

### ICL 8051 - Simulation

**Credit Hours:** (1-3) **Description** Surveying, analyzing, and designing simulation activities appropriate for classroom situations; individual and group participatory activities.

### ICL 8054 - Creativity Tchg/Curric

**Credit Hours:** (3) **Description** Instructional strategies relevant to development of creative potential; activities include problem-solving, metaphoring, inventing, synectics, evaluation, questioning, brainstorming, creative writing and thinking, and spontaneity.

### ICL 8058 - Values Education

**Credit Hours:** (3) **Description** Major movements related to values education and analysis of strategies applicable to educational settings.

### ICL 8082 - Seminar in Urban Education

**Credit Hours:** (3) **Description** This course uses various forms of seminar discussion, graduate inquiry, and creative engagement to provide a focused deliberative environment to study urban education issues and trends.

### ICL 8105 - Lang/Comm Inclusive Classrm

**Credit Hours:** (3) **Description** Instructing students with typical and exceptional communication needs. Includes interpreting speech/language assessment reports and designing instruction. Also use of augmentative and alternative communication devices and working with non-native English speaking students. Field experience: 8 hours.

**PREREQUISITE(S):** SPED 7000 or equivalent

### ICL 8106 - Prof/Eth Prac Inclusive Class

**Credit Hours:** (3) **Description** Education policy and practice: accountability, ethics, advocacy, and social challenges. Working with families and community stakeholders is highlighted. Instructional planning includes creating individual education plans, individual family service plans and transition planning. **PREREQUISITE(S):** SPED 7000 or equivalent

### ICL 8130 - Elem School Curriculum

**Credit Hours:** (3)

**Description** Analysis of curriculum theories, materials, and practices as they affect the child's potential and growth.

**PREREQUISITE(S):**

### ICL 8138 - Sem In Elem Educ

**Credit Hours:** (3) **Description** Analysis of contemporary issues and trends in elementary education.

### **ICL 8151-8159 - Special Topics in Instruction and Curriculum Leadership**

**Credit Hours:** (1-3) **Description** Topics are varied. May be repeated when topics change

### **ICL 8160 - Mdrn Meth Scndry Educ**

**Credit Hours:** (3) **Description** Secondary school teaching and how the secondary school can perform its role most effectively.

### **ICL 8165 - The Middle School**

**Credit Hours:** (3) **Description** Investigation of emerging concepts of the middle school and trends in classroom procedures and curriculum.

### **ICL 8172 - Spec Mthds Soc Stu Edu**

**Credit Hours:** (3) **Description** Critical analysis and research on significant issues in the field of secondary social studies education.

### **ICL 8200 - Prof Sem/Doctoral Stdnt**

**Credit Hours:** (3) **Description** Emphasis on how to be an effective doctoral student and college professor; three areas of focus are teaching, research, and service. May be repeated for a maximum of 9 credit hours. **PREREQUISITE(S):** Admission to the doctoral program Grades of S,U, or I will be given.

### **ICL 8300 - Cont Issues Lang Arts**

**Credit Hours:** (3) **Description** Analysis of current trends and issues in the teaching of language arts: theory and research related to teaching models and their application in the language arts.

### **ICL 8301 - Literature in PreK-12 School \*\***

**Credit Hours:** (3) **Description** Methods of teaching children's literature in the elementary school, including storytelling, dramatization, and choral speech work.

### **ICL 8302 - Tchg Lit To Adolescents \*\***

**Credit Hours:** (3) **Description** Methods of teaching adolescent literature including fiction, non-fiction, drama, and poetry.

### **ICL 8303 - Eng/Lan Comp Secnd Schl**

**Credit Hours:** (3) **Description** Emphasis on developing and implementing a sequential curriculum in secondary school language and composition. Field Experience: 8 hours.

### **ICL 8308 - Seminar Engl/Lang Arts**

**Credit Hours:** (3) **Description** Emphasis on oral and written language models and how these models can be used in the development of a student-centered language arts curriculum. K-12. Field Experience: 8 hours.

### **ICL 8309 - Dev Instructional Ldrs**

**Credit Hours:** (3) **Description** Application of development of instructional leaders, mentors and coaches within in a school environment; emphasis on developing leadership styles to ensure implementation of multiple initiatives and support colleagues for personal growth

### **ICL 8310 - Supptng Cont Spec Inst**

**Credit Hours:** (3) **Description** Application of development of instructional leaders, mentors and coaches within a school environment; emphasis on developing instructional skills to support various coaches within a district Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **ICL 8500 - Advanced Mathematics in K-8 Schools**

**Credit Hours:** (3) **Description** Models of K-8 school mathematics instruction; history, philosophy, and research supporting those models. **PREREQUISITE(S):** Teacher licensure

### **ICL 8501 - Elementary/Middle School Math Curriculum**

**Credit Hours:** (3) **Description** Issues and trends in elementary and middle school mathematics curriculum. Appropriate current reports of professional groups will be considered.



**ICL 8502 - Tchg Mathematics SCED**

**Credit Hours:** (3) **Description** Consideration of principles and techniques of teaching mathematics in secondary schools including study and evaluation of materials of instruction. Field experience: 8 hours. **PREREQUISITE(S):** Permission of instructor

**ICL 8503 - Secndry Math Ed Curric \*\***

**Credit Hours:** (3) **Description** Analysis of the secondary mathematics curriculum as it relates to sound educational practices.

**ICL 8505 - Advanced Workshop in K-8 Mathematics**

**Credit Hours:** 3 **Description** Issues and trends in K-8 mathematics education, with a particular focus on current standards and recommendations regarding mathematics education.

**ICL 8506 - Advanced Topics in Mathematics Teaching & Learning**

**Credit Hours:** 3 **Description** Models of elementary and middle school mathematics teaching and learning. Focus on research involving students' mathematical thinking.

**ICL 8508 - Sem Mathematics Educ**

**Credit Hours:** (3) **Description** Study and discussion of selected mathematics education topics of concern or special interest. May be repeated with a change in topics.

**ICL 8600 - Adv Science Elem**

**Credit Hours:** (3) **Description** Models of science instruction; history, philosophy, and research supporting these models. **PREREQUISITE(S):** Teacher licensure

**ICL 8601 - Elem Science Curriculum**

**Credit Hours:** (3) **Description** Examination of science curriculum materials; focus on procedures for evaluation of curriculum and materials and analysis of local curricula in science; includes techniques for conducting science workshops and in-service programs.

**ICL 8602 - Tchg Sci Scndry Schl**

**Credit Hours:** (3) **Description** An examination and analysis of modern science teaching strategies in the secondary school; emphasis on information processing and classroom learning strategies. Field experience: 8 hours.

**ICL 8608 - Sem Science Education**

**Credit Hours:** (3) **Description** A survey of selected problems and topics in science education.

**ICL 8650 - Adv Elem Soc Studies**

**Credit Hours:** (3) **Description** Advanced strategies for social studies instruction and history, philosophy, and research supporting those strategies. **PREREQUISITE(S):** Teacher licensure

**ICL 8652 - Tchng Soc Std Mid/Sec**

**Credit Hours:** (3) **Description** Consideration of principles and techniques for teaching secondary social studies. Field experience: 8 hours.

**ICL 8653 - Mid/Sec Soc Std Curric**

**Credit Hours:** (3) **Description** Analysis of programs and curricular materials for secondary social studies education.

**ICL 8655 - Constructivism & the New Social Studies \*\***

**Credit Hours:** 3 **Description** Historical examination and analysis of the development of new social studies curriculum and materials in the social studies classroom.

**ICL 8657 - Hist of Soc Studies Educatn \*\***

**Credit Hours:** (3) **Description** Historical examination and analysis of the development of social studies in education.

**ICL 8658 - Seminar Soc Stu Education**

**Credit Hours:** (3) **Description** Survey and evaluation of social and controversial issues and trends in the social studies education.

**ICL 8659 - Cold War Education \*\***

**Credit Hours:** (3) **Description** Historical examination and analysis of the development of American educational movements throughout the Cold War. **PREREQUISITE(S):** Admission to teacher education program and completion of MAT level one courses.

### **ICL 8701 - Adv Wksp ICL:Urban Educ**

**Credit Hours:** (3) **Description** This course requires investigations of Urban Education issues in schools and topic of inquiry will change if course is repeated.

### **ICL 8702 - Adv Topics in ICL:Urban Educ**

**Credit Hours:** (3) **Description** Current topics in areas of instruction and curriculum at advanced levels in Urban Education. This course addresses current research and issues in Urban Education school environments.

### **ICL 8704 - Wksp/Nwspaper In Clasrm**

**Credit Hours:** (3) **Description** (CIED 7704-8804).

### **ICL 8705 - Adv Mgng Lrng Environ**

**Credit Hours:** (3) **Description** Teacher's role in integrated approach to managing classroom's physical and behavioral learning environments, school curriculum, and pupil development and learning.

### **ICL 8707 - Using Data to Inform Teaching**

**Credit Hours:** (3) **Description** This course helps teachers gain knowledge and skill in using various forms of data to improve student learning and achievement. It includes data-driven teaching and decision making, data sources and measures, differentiating instruction, and action planning to guide instruction, curriculum and assessment.

### **ICL 8720 - STEM Curriculum Leadership**

**Credit Hours:** (3) **Description** Focus on curriculum standards and trends in mathematics, science, and engineering education. Topics include: introduction to the standards; the relationship between curriculum and equity; implications of the standards for instructional practice; the integration of technology and engineering; and the alignment between standards and curriculum materials. **PREREQUISITE(S):** Admission to IMBA concentration. Grades of S, U, or IP will be given.

### **ICL 8721 - STEM Teacher Development**

**Credit Hours:** (3) **Description** Focus on theory and practice around STEM teacher learning and professional development. The course will explore research-based practices and models of STEM professional development.

### **ICL 8722 - Teaching and Learning in STEM**

**Credit Hours:** (3) **Description** Focus on student-centered instructional models with particular attention to approaches that integrate science, engineering, technology, and mathematics.

### **ICL 8723 - Equity in STEM Education**

**Credit Hours:** (3) **Description** Focus on the history of mathematics and science education as it relates to equity and opportunity to learn. Additional topics include: culturally relevant pedagogy in mathematics and science; STEM education in urban schools; strategies for teaching mathematics and science to linguistically diverse students; teaching for social justice; and technology and opportunity to learn.

### **ICL 8801 - Talented & Mently Gifted**

**Credit Hours:** (3) **Description** Historical and societal perceptions and definitions of the talented and mentally gifted individuals; their social, emotional and learning processes.

### **ICL 8802 - Spec Populations/Gifted**

**Credit Hours:** (3) **Description** Examination of the nature and needs of gifted and talented students whose performance is affected by some condition interfering with optimal growth. **PREREQUISITE(S):** .

### **ICL 8803 - Intern Kindergarten**

**Credit Hours:** (3-9) **Description** Includes student teaching, supervised practicum, and other similarly organized professional experiences; designed to complement on-campus course study with actual on-site professional experience. Grades of S, U, or I will be given.

### **ICL 8804 - Erly Chldhd Student Tchg**

**Credit Hours:** (3-9) **Description** Includes student teaching experiences in both Pre-Kindergarten or Kindergarten, and

Primary grades 1-3. COREQUISITE: ICL 7993. Grades of S, U, or I will be given.

### **ICL 8805 - Intern Elem Schl**

**Credit Hours:** (3-9) **Description** Includes student teaching, supervised practicum, and other similarly organized professional experiences; designed to complement on-campus course study with actual on-site professional experience. Grades of S, U, or I will be given.

### **ICL 8806 - Elem Student Tchg**

**Credit Hours:** (3-9) **Description** Includes student teaching, supervised practicum, and other similarly organized professional experiences; designed to complement on-campus course study with actual on-site professional experience. COREQUISITE: ICL 7993. Grades of S, U, or I will be given.

### **ICL 8807 - Intern Scndry Schl**

**Credit Hours:** (3-9) **Description** Includes student teaching, supervised practicum, and other similarly organized professional experiences; designed to complement on-campus course study with actual on-site professional experience. Grades of S, U, or I will be given.

### **ICL 8808 - SCED Student Tchg**

**Credit Hours:** (3-9) **Description** Includes student teaching, supervised practicum, and other similarly organized professional experiences; designed to complement on-campus course study with actual on-site professional experience. COREQUISITE: ICL 7993. Grades of S, U, or I will be given.

### **ICL 8809 - Rdng Rsrch Practicum**

**Credit Hours:** (3)

### **ICL 8810 - Teacher Leader Practicum**

**Credit Hours:** (3) **Description** The teacher leader practicum will focus on creating a school climate to strengthen student achievement by developing instructional supports. These supports may include the creation of instructional plans for struggling teachers, implementing professional learning communities and developing a year long professional development plan for a school

### **ICL 8811 - Mthd Tchg Gifted/Ac Tltd**

**Credit Hours:** (3) **Description** Teaching strategies for fostering gifted behavior at preschool, elementary, and secondary levels; procedures and criteria of evaluation, curriculum sequences and guides, alternative strategies for curriculum development, the writing and implementing of individualized educational plans.

### **ICL 8822 - Adv Mthd Gifted/Ac Tltd**

**Credit Hours:** (3) **Description** Examination of provisions of services to gifted students in other than traditional enrichment programs.

### **ICL 8850 - Suprvsn Student Tchg**

**Credit Hours:** (3) **Description** Principles and techniques of student teaching supervision; designed for supervising teachers, administrators, coordinators of student teaching programs, and college personnel. Grades of A-F will be given.

### **ICL 8912 - Fndtns/NBPTS Candidacy**

**Credit Hours:** (3) **Description** Develops thorough understanding of National Board for Professional Teaching Standards, including performance-based assessments such as student work samples and reflection papers, as well as analyses of classroom teaching, classroom discourse, and learning through videotape analysis.

### **ICL 8950-8969 - Advanced Topics in Instruction and Curriculum**

**Credit Hours:** (1-3) Former: (CIED 7950-59/CIED 8950-59) **Description** Current topics in areas of instruction and curriculum at advanced levels. May be repeated with change in topic and content emphasis.

### **ICL 8953 - Writing for Academic Publicatn**

**Credit Hours:** (3) **Description** Learning to master the discourses necessary to succeed in academic writing; focus on genres of academic writing; emphasis on strategies for successful academic work based on publication.

### **ICL 8991 - Independent Study**

**Credit Hours:** (1-9) **Description** Includes special problems, field studies, and other similarly organized professional experiences under the direct supervision of a faculty member within the department; emphasis on student planning,

initiating, conducting, and completing independent studies, projects, etc., designed to meet programmatic goals and individual needs. Grades of A-F will be given.

### **ICL 8994 - Developing Proposals**

**Credit Hours:** (3) **Description** Procedures and techniques for development of research, project, and grant proposals; emphasis on development of proposal for research study or in response to funding request.

### **ICL 8995 - Research Seminar \*\***

**Credit Hours:** (3-6) **Description** Survey and analysis of research in the varied disciplines of curriculum and instruction. To be taken during the doctoral residency. May be repeated for a maximum of 6 credit hours. Grades of S, U, or I will be given.

### **ICL 8998 - Directed Reading**

**Credit Hours:** (1-3) **Description** Individually directed readings culminating in synthesis of ideas. May be repeated with change in topic for 9 hours.

**PREREQUISITE(S):** Permission of instructor. Grades of S, U, or I will be given.

### **ICL 8999 - Supervised Research ICL**

**Credit Hours:** (1-6) **Description** Collaborative research with faculty including planning, design, management, analysis, and reporting of research. May be repeated for maximum of 12 hours. **PREREQUISITE(S):** Minimum of 12 hours in concentration and permission of instructor. Grades of S, U, or I will be given.

### **ICL 9000 - Dissertation \*\***

**Credit Hours:** (1-12) **Description** Credit may be earned over a period of several semesters. The dissertation may be an organized scientific contribution or a comprehensive analysis of theory and practice in a specific area. Grades of S, U, or IP will be given.

## **Instructional Design and Technology**

### **IDT 7052 - Intro Instr Design & Technlgy \*\***

**Credit Hours:** (3) **Description** In-depth overview of the field of instructional technology, history, philosophy, critical issues

of the field, foundations and applications of instructional technology, and associated areas of research.

### **IDT 7060 - Message Design \*\***

**Credit Hours:** (3) **Description** Focuses on design and development of media, paper-based and electronic, to support learning; students will create products to solve instructional problems through a survey of various technologies.

### **IDT 7061 - Instructional Design & EdTech \*\***

**Credit Hours:** (3) **Description** Computers and technology in the instructional process, including problem solving using computer tools; technological applications for the classroom; uses for technology in different content areas.

### **IDT 7062 - Teaching, Learning, & Tech \*\***

**Credit Hours:** (3) **Description** Application of instructional design principles to creation of computer-based instruction; emphasis on use of authoring and scripting systems to create instructional software.

### **IDT 7063 - Models & Innovations of EdTech \*\***

**Credit Hours:** (3) **Description** Analysis of issues and trends related to instructional computing and instructional technology in K-12 classroom.

### **IDT 7064 - EdTech & Instructl Development \*\***

**Credit Hours:** (3) **Description** Issues, processes, and strategies relative to changes occurring with design, implementation, and evaluation of Internet technologies in instructional environments. **PREREQUISITE(S):** IDT 7060-IDT 8060, IDT 7061-IDT 8061, or permission of instructor.

### **IDT 7070 - Instructional Design Process I \*\***

**Credit Hours:** (3) **Description** Applies the instructional design process to conduct a needs assessment that supports the creation of self-paced instructional units addressing performance and learning problems for PK-12 education, business, health care, and related learning environments.

### **IDT 7071 - Principles & Appl Instr Design\*\***

**Credit Hours:** (3) **Description** Application of instructional design principles to solve performance and instructional problems in educational and non-educational environments. 6

### **IDT 7072 - Seminar in Online Instruction \*\***

**Credit Hours:** (3) **Description** Application of instructional design principles to development of online instruction. Beginning and intermediate students work together; covers beginning content when taken first and may be repeated for a maximum of 6 credit hours for more advanced content. **PREREQUISITE(S):** IDT 7070-IDT 8070 or permission of instructor.

### **IDT 7073 - Sem Computer Based Lrng Envrn**

**Credit Hours:** (3) **Description** Applying instructional design principles to develop of computer-based learning environments. Beginning and intermediate students work together. Course covers beginning content when taken first. May be repeated for a maximum of 6 credit hours for more advanced content. **PREQREQUIISTE:** IDT 7070-8070 or permission of instructor.

### **IDT 7074 - Thry/Models Instructnal Design \*\***

**Credit Hours:** (3) **Description** A critical examination of instructional design theories from the perspective of supporting research and application.

### **IDT 7075 - Instrctnl/Performnce Consultng \*\***

**Credit Hours:** (3) **Description** Learning how to be an instructional and performance consultant. Applying procedural and interpersonal skills when working with clients to design, develop, and evaluate learning and performance environments. **PREREQUISITE(S):** IDT 7070-IDT 8070 or permission of instructor.

### **IDT 7076 - Seminar in Workshop Design**

**Credit Hours:** (3) **Description** Technical and theoretical principles for developing effective seminars and workshops. Design, preparation, and implementation skills are developed for effective adult learning environments. **PREREQUISITE(S):** IDT 7070-IDT 8070 and research or statistics course.

### **IDT 7078 - Seminr Instrct Design&Technlgy \*\***

**Credit Hours:** (3) **Description** Professional and research problems in instructional strategies, design, and technology. May be repeated once with a change in topic.

### **IDT 7080 - Learning Experience Design \*\***

**Credit Hours:** (3) **Description** Prepares students to understand and apply instructional design principles to evaluate instructional materials that are designed to solve performance and learning problems. Applies the instructional design process to implement and evaluate an instructional unit based on documentation produced. **PREREQUISITE(S):** IDT 7070 -IDT 8070

### **IDT 7090 - Dev Interactive Lrng Envirnmnt I \*\***

**Credit Hours:** (3) **Description** Students use instructional design principles and models to develop interactive learning environments. Students learn current development tools to create effective, efficient and appealing learning environments. Beginning and advanced students work together. Covers beginning content when taken first. May be repeated for a maximum of 6 credit hours for advanced content. **PREREQUISITE(S):** IDT 7070 -IDT 8070 and IDT 7080-IDT 8080 or Permission of instructor.

### **IDT 7095 - Dev Intractive Lrng Envirnmnt II \*\***

**Credit Hours:** (3) **Description** Teams of students use instructional design principles to design and develop an instructional system, emphasizing advanced development skills with current technologies. Students contract with real clients, define project goals and timelines, manage instructional design projects, and document the instructional design process. **PREREQUISITE(S):** IDT 7090 -IDT 8090 or permission of instructor.

### **IDT 7230 - Directed Writing in Learning and Design**

**Credit Hours:** (3) **Description** Students use academic writing to develop a scholarly document to address a problem of practice in the field of learning, design, technology. May be repeated for a maximum of 9 credit hours.

### **IDT 7810 - Practicum Instr Design/Technlg \*\***

**Credit Hours:** (3-9) **Description** Planned, supervised experience in an instructional setting appropriate to student's specialization area of instructional design and technology. The student will have the opportunity to synthesize knowledge and skills and demonstrate professional competencies in educational or training settings. **PREREQUISITE(S):** IDT 7070-IDT 8070 and 3 additional hours of IDT graduate coursework.

### **IDT 8052 - Intro Instr Design & Technlgy**

**Credit Hours:** (3) **Description** In-depth overview of the field of instructional technology; history, philosophy, and critical issues of the field; foundations and applications of instructional technology, and associated areas of research.

### **IDT 8060 - Message Design**

**Credit Hours:** (3) **Description** Focuses on design and development of media, paper-based and electronic, to support learning; students will create products to solve instructional problems using various technologies.

### **IDT 8061 - Instructional Design & EdTech \*\***

**Credit Hours:** (3) **Description** Computers and technology in the instructional process, including problem solving using computer tools; technological applications for the classroom; uses for technology in different content areas.

### **IDT 8062 - Teaching, Learning, & Tech \*\***

**Credit Hours:** (3) **Description** Application of instructional design principles to creation of computer-based instruction; emphasis on use of authoring and scripting systems to create instructional software.

### **IDT 8063 - Models & Innovations of EdTech \*\***

**Credit Hours:** (3) **Description** Analysis of issues and trends related to instructional computing and instructional technology in K-23 classroom.

### **IDT 8064 - EdTech & Instructil Development \*\***

**Credit Hours:** (3) **Description** Issues, processes, and strategies relative to changes occurring with design, implementation, and evaluation of Internet technologies in

instructional environments. **PREREQUISITE(S):** IDT 7060-IDT 8060, IDT 7061, or permission of instruction.

### **IDT 8070 - Instructional Design Process I**

**Credit Hours:** (3) **Description** Applies the instructional design process to conduct a needs assessment that supports the creation of self-paced instructional units addressing performance and learning problems for PK-12 education, business, health care, and related learning environments.

### **IDT 8071 - Principles & Appl Instr Design**

**Credit Hours:** (3) **Description** Application of instructional design principles to solve performance and instructional problems in educational and non-educational environments. 6

### **IDT 8072 - Seminar in Online Instruction**

**Credit Hours:** (3) **Description** Application of instructional design principles to development of online instruction. Beginning and intermediate students work together; covers beginning content when taken first and may be repeated for a maximum of 6 credit hours for more advanced content. **PREREQUISITE(S):** IDT 7070-IDT 8070 or permission of instructor.

### **IDT 8073 - Sem Computer Based Lnrng Envrn**

**Credit Hours:** (3) **Description** Application of instructional design principles to development of computer-based learning environment. Beginning and intermediate students work together; covers beginning content when taken first and may be repeated for a maximum of 6 credit hours for more advanced content. **PREREQUISITE(S):** IDT 7070-IDT 8070 or permission of instructor. Grades of S, U, or I will be given.

### **IDT 8074 - Thry/Models Instructnal Design**

**Credit Hours:** (3) **Description** A critical examination of instructional design theories from the perspective of supporting research and application.

### **IDT 8075 - Instructnl/Performnce Consultng**

**Credit Hours:** (3) **Description** Learning how to be an instructional and performance consultant. Applying procedural and interpersonal skills when working with clients to design,

develop, and evaluate learning and performance environments.  
**PREREQUISITE(S):** IDT 7070-IDT 8070 or permission of instructor.

### **IDT 8076 - Seminar in Workshop Design**

**Credit Hours:** (3) **Description** Technical and theoretical principles for developing effective seminars and workshops. Design, preparation, and implementation skills are developed for effective adult learning environments.

**PREREQUISITE(S):** IDT 7070-IDT 8070 and reasearch or statistics course.

### **IDT 8078 - Semnr Instrct Design&Technlgy**

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**Credit Hours:** (3) **Description** Professional and research problems in instructional strategies, design, and technology. May be repeated once with a change in topic.

### **IDT 8080 - Learning Experience Design**

**Credit Hours:** (3) **Description** Prepares students to understand and apply instructional design principles to evaluate instructional materials that are designed to solve performance and learning problems. Applies the instructional design process to create a self-paced an instructional unit based on documentation produced in IDT 7070-8070.

**PREREQUISITE(S):** IDT 7070-IDT 8070.

### **IDT 8090 - Dev Interactive Lrng Envirnmnt I**

**Credit Hours:** (3) **Description** Students use instructional design principles and models to develop interactive learning environments. Students learn current development tools to create effective, efficient and appealing learning environments. Beginning and advanced students work together. Covers beginning content when taken first. May be repeated for a maximum of 6 credit hours for advanced content.

**PREREQUISITE(S):** IDT 7060-IDT 8060 and IDT 7070-IDT 8070, and IDT 7080-IDT 8080 or permission of instructor.

### **IDT 8091 - Directed Readings IDT \*\***

**Credit Hours:** (1-3) **Description** Individually directed readings which culminate in the synthesis of a student's ideas. May be repeated with change in topic for 9 credits.

**PREREQUISITE(S):** Permission of instructor. Grades of S,U, or I will be given.

### **IDT 8092 - Research and Scholarship in IDT III**

**Credit Hours:** 3 **Description** Students learn about methods of research and analysis, becoming familiar with various designs and their purposes. Students identify a problem of practice within the field of instructional design and technology and write a proposal for solving it. May be repeated for a maximum of 9 credit hours.

### **IDT 8095 - Dev Intractive Lrng Envirnmnt II \*\***

**Credit Hours:** (3) **Description** Teams of students use instructional design principles to design and develop an instructional system, emphasizing advanced development skills and current technologies. Students contract with real clients, define project goals and timelines, manage instructional design projects, and document the instructional design process. **PREREQUISITE(S):** IDT 7090-IDT 8090 or permission of instructor.

### **IDT 8100 - Research and Scholarship in IDT I \*\***

**Credit Hours:** (3) **Description** Students develop academic writing skills and learn how theoretical frameworks can be used to examine problems of practice in the field of learning, design, and technology. Students critique and synthesize theoretical and empirical literature into an original, coherent, and structured document addressing a problem of practice. [May be repeated for a maximum of 6 credit hours.]

### **IDT 8230 - Directed Writing in Learning and Design**

**Credit Hours:** (3) **Description** Students use academic writing to develop a scholarly document to address a problem of practice in the field of learning, design, and technology. May be repeated for a maximum of 9 credit hours.

### **IDT 8500 - Research and Scholarship in IDT II \*\***

**Credit Hours:** (3) **Description** Students develop an understanding of research methods, designs, and applications learning and design scholars use to theoretically and empirically investigate problems seen in practice. Students learn skills to critically consume literature.

### **IDT 8600 - Dissertation Proposal \*\***

**Credit Hours:** 3 **Description** Students develop and defend a proposal for an endeavor that influences a contemporary, complex problem in the field of design, learning, and technology. Students who have approved dissertation proposals are expected to seek and receive institutional review board (IRB) approval. With IRB approval, they are expected to begin carrying out their proposed research. May be repeated for a maximum of 9 credit hours.

**PREREQUISITE(S):** Permission of instructor

## **IDT 8810 - Practicum Instr Design/Technlgy**

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**Credit Hours:** (3) **Description** Planned, supervised experience in an instructional setting appropriate to student's specialization area of instructional design and technology. The student will have the opportunity to synthesize knowledge and skills and demonstrate professional competencies in educational or training settings. **PREREQUISITE(S):** IDT 7070-IDT 8070 and 3 additional hours of IDT graduate coursework. Grades of S, U, or I will be given.

## **Interior Design**

### **IDES 6021 - I D Independent Study**

**Credit Hours:** (1) **Description** Independent research in selected area of interior design under supervision of Department of Architecture faculty. **PREREQUISITE(S):** permission of instructor.

### **IDES 6430 - Interior Design Internship**

**Credit Hours:** (3) **Description** Experiential learning to be achieved through an approved work assignment with a design firm, appropriate public or private entity, or a Department of Architecture faculty. **PREREQUISITE(S):** IDES 3711 and permission of instructor.

## **Italian**

### **ITAL 7690 - Research in Italian Studies**

**Credit Hours:** (3) **Description** Individual research on topics in Italian literature and culture. May be repeated for a maximum of 9 credit hours. May be repeated for a maximum of 10 credit hours

## **Japanese**

### **JAPN 7101 - Adv Business Japn I**

**Credit Hours:** (3) **Description** Vocabulary and institutions necessary for dealing in the Japanese business world. Maintenance and extension of conversational skills to business context. Course is conducted in Japanese. Open only to students enrolled in International MBA program. May be repeated with change in topic. **PREREQUISITE(S):** MATH 4635.

### **JAPN 7102 - Adv Business Japn II**

**Credit Hours:** (3) **Description** Business Japanese language skills applied to specific fields of business, which include finance, manufacturing, the tourist industry, etc. Course is conducted in Japanese. Open only to students enrolled in International MBA program. **PREREQUISITE(S):** MATH 1920.

## **Journalism and Strategic Media**

### **ADVR 6800-6802 - Special Topics Advertising**

**Credit Hours:** (3) **Description** Intensive study of a single critical issue or current topic. Topics may vary  
**PREREQUISITE(S):** Permission of instructor.

### **CRMM 6140 - Publication Design**

**Credit Hours:** (3) *Cross listing* (same as CRMM 4140, ART 4140-ART 6140). **Description** Advanced skills and techniques for design of printed media, including magazine and newspaper design. Emphasis on story and page design, graphics, headlines and other display typography. Approaches to print design presentation on digital platforms.

### **CRMM 6500 - Web Publish I: html/CSS**

**Credit Hours:** (3) Former: 6500 *Cross listing* ART 6500  
**Description** Introduction of web design software Dreamweaver and web design concept; basic knowledge of web markup language html and cascading style sheets (CSS) via hand code training; development of website projects incorporating multimedia elements; incorporation of various content management system (CMS) in portfolio setup.

### **CRMM 6526 - Advanced Photojournalism**



**Credit Hours:** (3) *Cross listing* ART 6526 **Description** Advanced skills and photojournalism techniques for still photography and video; emphasis on action, sports, fashion, food, and portraits. **PREREQUISITE(S):** Permission of the instructor. Standard Letter

### CRMM 6550 - Web Publish II/: html/CSS

**Credit Hours:** (3) **Description** Creation and development of website projects; systematic training in writing html codes; focused learning of cascading style sheet (CSS); final production of a multimedia project.

### CRMM 6600 - Creative Social Video

**Credit Hours:** 3 *Cross listing* CRMM 4600 **Description** Instruction, training, practice and analysis on YouTube channel development, including research, organization, branding and content presentation skills. The course will focus on effective production and editing concepts as they relate to video, audio and design. Standard Letter

### CRMM 6900 - Creative Media Lab

**Credit Hours:** 3 **Description** Planning, development, design and execution of a multimedia project for print and digital display application, including data visualization, illustration, branding, video and photography. **PREREQUISITE(S):** Graduate status

### JOUR 6150 - Sports Writing/Reporting

**Credit Hours:** (3) *Cross listing* (same as JOUR 4150). **Description** Development of advanced writing, reporting and professional skills specific to sports media; emphasis on practice of game reporting, feature stories, column and opinion writing and multimedia. **PREREQUISITE(S):** Graduate Status and Permission of Instructor.

### JOUR 6155 - Multimedia Sports Reporting

**Credit Hours:** (3) **Description** Furthers student's reporting, writing, shooting and other professional skills specific to sports media from breaking news to features and in-depth stories across a range of digital platforms. **PREREQUISITE(S):** JOUR 4150

### JOUR 6160 - Food Writing/Reporting

**Credit Hours:** (3) **Description** Addresses specialized niche of food writing by producing stories, both long and short form, and developing new media content for a class food blog. **PREREQUISITE(S):** JOUR 3120, JOUR 3526.

### JOUR 6165 - Feature Writing/Reporting

**Credit Hours:** 3 *Cross listing* JOUR 4165 **Description** Advanced practice in reporting, writing and editing feature stories for magazines, newspapers and the Web; finding and developing publishable ideas; freelance techniques; advanced reporting skills; writing techniques with emphasis on clarity, focus, structure, word choice, narrative and explanatory approaches; critiques of student work, editing and revision. Standard Letter

### JOUR 6170 - Business Reporting/Writing

**Credit Hours:** (3) *Cross listing* (same as JOUR 4170) **Description** Introduction to business writing and reporting and to the opportunities and issues in this growing field. Focuses on covering companies, the people who work for them, and the consumers of their goods and services along with issues of the economy, finance and the stock market. **PREREQUISITE(S):** Graduate status and permission of instructor

### JOUR 6180 - Public Issues Writing/Reporting

**Credit Hours:** (3) **Description** Emphasis placed on deadline writing and critiquing of political and public policy news. Encourages familiarity with the methods and insights of political and social science and develops confidence to use those methods and insights in reporting. Encourages use of social media to cover and explain campaigns and policy. **PREREQUISITE(S):** JOUR 3120, JOUR 3526.

### JOUR 6185 - Social Justice Writing/Reporting

**Credit Hours:** 3 *Cross listing* JOUR 4185 **Description** Writing and reporting news and news feature stories on issues concerning social justice. Standard Letter

### JOUR 6190 - Opinion Writing/Reporting

**Credit Hours:** (3) *Cross listing* (same as JOUR 4190) **Description** Principles and practices for well-researched and well-written editorials, columns, op-ed submissions, broadcast commentaries and long form analysis perspective pieces;

thorough examination of the purpose and impact of opinion journalism on readers, political leaders, policy makers and society at large. **PREREQUISITE(S):** Graduate status and permission of instructor

### **JOUR 6530 - Innovative Storytelling Techniques**

**Credit Hours:** (3) **Description** The course offers advanced instruction, training, practice and analysis in multi-platform journalism, including audio, video, and social media. The course will also focus on effective use of various media platforms to tell stories in a modern media environment. NOTE: The topic of the course will be set each semester by the instructor. 6 **PREREQUISITE(S):** JRSM 2121 and JOUR 3526. Students at graduate level must get the instructor's permission.

### **JOUR 6535 - Social Media Journalism**

**Credit Hours:** 3 *Cross listing* JOUR 4535 **Description** Learn to cover news and information, track analytics and search out the newest news trends on popular social media platforms. Standard Letter

### **JOUR 6540 - Podcasting**

**Credit Hours:** 3 **Description** Instruction, training, practice and analysis in journalistic podcasting, including research, organization, branding, and content presentation skills. The course will also focus on effective interviewing with emphasis on developing and delivering interesting and compelling content audio storytelling. **PREREQUISITE(S):** Permission of instructor.

### **JOUR 6629 - Broadcast Reporting II**

**Credit Hours:** (3) Former: 6629 **Description** Gathering, writing and presentation of news for television. Students will shoot, write, edit, and voice packages for use in both the reporting and producing classes.

### **JOUR 6639 - TV News Producing**

**Credit Hours:** (3) **Description** Producing, writing, editing and using electronic equipment to assemble a television newscast; emphasis on performing the various tasks in a working newsroom.

### **JOUR 6801 - Reporting Social Justice**

**Credit Hours:** (3) **Description** Writing and reporting news and news feature stories on issues concerning social justice.

### **JOUR 6806-6809 - Special Topics in Journalism**

**Credit Hours:** (3) **Description** Intensive study of a single critical issue or current topic. Topics may vary  
**PREREQUISITE(S):** Permission of instructor.

### **JOUR 6998 - Multimedia News Lab**

**Credit Hours:** 3 Former: 6998 **Description** Write, produce content for the online student media outlet, which covers the University of Memphis community; course will mirror collaborative opportunities underway in industry and provide students with the strongest multimedia material possible for portfolios. **PREREQUISITE(S):** Graduate status & permission of instructor

### **JRSM 6700 - Media Law**

**Credit Hours:** (3) **Description** Origin and development of legal principles affecting freedom of expression and provisions of laws of libel, slander, copyright, and other statutes limiting communication in fields of publishing and broadcasting.

### **JRSM 6702 - Media, Diversity & Society \*\***

**Credit Hours:** (3) **Description** Advanced study of critical problems faced by mass media, with exploration of complexities that cause them.

### **JRSM 6704 - Issues in Sport and Media**

**Credit Hours:** (3) **Description** Examines the ongoing relationship of sports and media. Students will think more critically about the role of sports in the contemporary media landscape and vice-versa.

### **JRSM 6708 - Mass Media Ethics**

**Credit Hours:** (3) **Description** Classical approaches to ethics presented with their application to the day-to-day considerations that journalism, public relations, and advertising professionals must face in working with employers, local publics, and a larger society dependent on a free flow of accurate information. May be repeated for maximum of 12 credits.

### JRSM 6712 - Mass Media & Cultures

**Credit Hours:** (3) **Description** International communication, flow of news and propaganda; role in national development and international affairs; growth and impact of global journalism, television news, advertising, and public relations; comparison of media systems.

### JRSM 6720 - Presidents and the Press

**Credit Hours:** (3) **Description** Conflict and symbiosis between the White House and the news media; studies of history, journalism, and politics; how various presidents used or failed to use the media, how they were covered and represented, and how that relationship has changed over the years.

### JRSM 7000 - Media Writing/Editing

**Credit Hours:** (3) **Description** Information gathering, writing, and editing skills necessary for any field within journalism and mass communication through lectures, discussions, and exercises that meld theory to technique; both laboratory writing and field assignments.

### JRSM 7002 - Pro Seminar \*\*

**Credit Hours:** (3) Former: 7002 **Description** Self-paced, online orientation for incoming master's students, addressing skills and issues relevant to graduate studies in mass communication.

### JRSM 7015 - Advanced Media Writing \*\*

**Credit Hours:** (3) **Description** Designed to help students become more precise as well as versatile writers by diagnosing their writing, polishing their grammar and editing skills, and teaching them to write with clarity, cohesiveness, and conciseness.

### JRSM 7025 - Law Mass Communication

**Credit Hours:** (3) **Description** Laws and regulations affecting mass media with attention to social and political forces that shape the law; exploration of First Amendment theories as well as the constitutional framework of the legal system; in-depth legal research in the student's selected area of interest.

### JRSM 7050 - Mass Comm Theory \*\*

**Credit Hours:** (3) **Description** Key concepts and development of theories offered to explain operation and effects of mass communication media; multidiscipline overview of theories dealing with advertising, broadcasting, print, and public relations messages, media, and effects.

### JRSM 7080 - Quantitative Research Methods \*\*

**Credit Hours:** (3) **Description** Familiarization with content analysis, survey research, data analysis, and field studies as practiced by reporters, editors, and public relations decision makers; modern research techniques and class project using computer analysis. **PREREQUISITE(S):** JRSM 7050.

### JRSM 7085 - Qualitative Research Methods \*\*

**Credit Hours:** (3) **Description** Familiarization with in-depth interviews, focus groups, participant observation, and content analysis; practical experience in collecting and analyzing qualitative data. **PREREQUISITE(S):** JRSM 7050.

### JRSM 7100 - Entrepreneurial Media \*\*

**Credit Hours:** (3) **Description** Examines business models and new media tools that can encourage entrepreneurial thinking and planning in various fields of mass communication, as well as the theory and practices of traditional media management. Subjects will include assessment, organization and strategy, budgeting, decision-making, and other functions in advertising, news, and public relations.

### JRSM 7124 - Data Journalism \*\*

**Credit Hours:** (3) **Description** Advanced use of computer technology and investigative techniques to access, analyze, and develop database information in combination with traditional news reporting. May be repeated for maximum of 9 credit hours **PREREQUISITE(S):** MATH 6636

### JRSM 7200-7209 - Special Topics in Journalism \*\*

**Credit Hours:** (1-3) **Description** Topics are varied. **PREREQUISITE(S):** Permission of instructor.

### JRSM 7320 - Mass Media & Diversity \*\*

**Credit Hours:** (3) **Description** Research and analysis of the relationship among mass media, women, and minorities.

### **JRSM 7330 - Social Media & Community Engagement \*\***

**Credit Hours:** (3) **Description** Create campaigns and relationships that build organizational voice, serial storytelling, and working with a community to encourage strong organization/brand-public relationships. Content creation using multiple technologies and platforms, including both social and traditional media. Students will be exposed to a variety of case studies and community examples for analysis.

### **JRSM 7350 - Advanced Multimedia Reporting \*\***

**Credit Hours:** (3) **Description** Recent research findings in news reporting, writing and editing principles; practical experience in preparing finished news reports suitable for publication or dissemination in professional-level mass medium.

### **JRSM 7400 - PR Principles & Issues**

**Credit Hours:** (3) **Description** Contemporary social trends, public relations roles and responsibilities, and applicable public relations theory.

### **JRSM 7410 - Advanced Crisis Communication \*\***

**Credit Hours:** (3) **Description** Discussing all aspects of a crisis, including preparation, response, recovery, and mitigation. Focuses on communication from an organization and government to all potential publics. Will also discuss the impact of social media and potential from one-to-one communication. Course will include a multi-day crisis simulation.

### **JRSM 7412 - Social Media Analytics and Evaluation \*\***

**Credit Hours:** (3) **Description** Research for strategic communicators, including focus groups and surveys. Basic qualitative and quantitative research skills will be discussed, including how to conduct and analyze focus groups, write survey questions, and perform basic statistical analyses. Gathering, understanding, and utilizing social media analytics

for a variety of platforms will also be discussed. Students will become HootSuite-certified.

### **JRSM 7414 - Audience Analysis&Segmentation**

**Credit Hours:** (3) **Description** Understanding the variety of audiences and publics faced in strategic communication, including how to segment them properly, the importance of understanding a variety of audience characteristics, and how to use research to reach and comprehend the impact those audiences can have on strategic communication work.

### **JRSM 7416 - Global Strategic Communication \*\***

**Credit Hours:** (3) **Description** This class looks at a wide variety of concepts from other courses, including writing, social media usage, research, management, and audience analysis, to understand them in a global context. There is also a critical discussion of strategic communication work, encouraging students to think about a broader variety of responses and reactions. This include both how to develop an integrated, holistic global communication program, and how to manage such a program.

### **JRSM 7418 - Integrated Strategic Mgmt**

**Credit Hours:** (3) **Description** A discussion of the place of public relations and advertising in organizational management decision making, the need for long-term strategic thinking, and the importance of supporting and contributing to organizational leadership. Will also include discussion of brand equity management and organizational leadership.

### **JRSM 7422 - Writing for Strategic Media \*\***

**Credit Hours:** (3) **Description** Writing for all aspects of public relations and advertising, with a specific focus on writing for audio/visual and social media platforms, including translating one message across multiple technologies and platforms. Focus will be on writing in an active, engaging voice that aligns with the organization's mission and profile.

### **JRSM 7424 - Media Effects & Communication**

**Credit Hours:** (3) **Description** This course explores the social and psychological effects of media on viewers and how viewers reach to media content. It also explores the psychological aspects of human computer interaction (HCI)

and computer mediated communication (CMC).

**PREREQUISITE(S):** JRSM 7050 or permission of instructor.

### **JRSM 7510 - Information Design \*\***

**Credit Hours:** (3) **Description** Use of visual communication skills to present qualitative and quantitative data. Emphasis on effective communication, user experience and multimedia presentation.

### **JRSM 7530 - Visual Media Theory & Practice \*\***

**Credit Hours:** (3) **Description** Theoretical foundations of visual communication, including Gestalt, semiotics, user interface design, and theories of practice. Application of skills to develop design projects. Grades of S, U, or IP will be given.

### **JRSM 7600 - Graduate Media Practicum \*\***

**Credit Hours:** (3) **Description** Work in practical assignments at a media organization under supervision of qualified practitioners or application of practical experience or research in a reviewed project. **PREREQUISITE(S):** Permission of instructor.

### **JRSM 7650 - Media Startup Practicum**

**Credit Hours:** (3) **Description** Students will engage in a semester-long project that will involve building a business plan, developing prototypes or products, creating content, and/or making advertising or public relations materials and strategies for media-related startups. Project will be determined in consultation with instructor.

**PREREQUISITE(S):** Permission of instructor S/U/I

### **JRSM 7700 - Individual Research \*\***

**Credit Hours:** (3) **Description** Projects on non-thesis related topics of special interest to the student, ending in a completed research article or report. **PREREQUISITE(S):** Permission of instructor.

### **JRSM 7800 - Directed Indiv Readings \*\***

**Credit Hours:** (3) **Description** Preparation of literature review for master's thesis with extensive bodies of writing in topic areas. May be taken to prepare scholarly papers on

subjects of individual interest. **PREREQUISITE(S):** Permission of instructor.

### **JRSM 7990 - Media Portfolio \*\***

**Credit Hours:** (2) **Description** Development of digital portfolio of professional and/or academic work and presentation. S/U **PREREQUISITE(S):** Permission of instructor.

### **JRSM 7996 - Thesis \*\***

**Credit Hours:** (1-6) **PREREQUISITE(S):** Permission of instructor.

### **JRSM 7998 - Professional Project \*\***

**Credit Hours:** (1-6) **Description** Completion of supervised professional project in student's area of expertise. Repeatable to maximum of 6 hours; only 3 hours applicable to degree. Grades of S, U, or IP will be given. **PREREQUISITE(S):** Permission of instructor.

### **JRSM 8002 - Doctoral Pro Seminar**

**Credit Hours:** 3 **Description** Introduction to practices of scholarship in journalism and strategic media. Overview of academic associations, research paradigms, the research process, university systems, and career preparation. **PREREQUISITE(S):** Doctoral Status Standard Letter

### **JRSM 8010 - Pedagogy in Journalism and Strategic Media**

**Credit Hours:** 3 **Description** Teaching and learning methodologies and theories appropriate to mass communication instruction. **PREREQUISITE(S):** Doctoral status. Standard Letter

### **JRSM 8025 - Law Mass Communication**

**Credit Hours:** (3) **Description** Laws and regulations affecting mass media with attention to social and political forces that shape the law; exploration of First Amendment theories as well as the constitutional framework of the legal system; in-depth legal research in the student's selected area of interest.

### **JRSM 8050 - Mass Comm Theory**

**Credit Hours:** (3) **Description** Key concepts and development of theories offered to explain operation and effects of mass communication media; multidiscipline overview of theories dealing with advertising, broadcasting, print, and public relations messages, media, and effects.

### **JRSM 8080 - Quantitative Research Methods**

**Credit Hours:** 3 **Description** Familiarization with content analysis, survey research, data analysis, and field studies as practiced by reporters, editors, and public relations decision makers; modern research techniques and class project using computer analysis. **PREREQUISITE(S):** Doctoral status

### **JRSM 8085 - Qualitative Research Methods**

**Credit Hours:** 3 **Description** Familiarization with in-depth interviews, focus groups, participant observation, and content analysis; practical experience in collecting and analyzing qualitative data. **PREREQUISITE(S):** Doctoral Status

### **JRSM 8100 - Entrepreneurial Media**

**Credit Hours:** (3) **Description** Examines business models and new media tools that can encourage entrepreneurial thinking and planning in various fields of mass communication, as well as the theory and practices of traditional media management. Subjects will include assessment, organization and strategy, budgeting, decision-making, and other functions in advertising, news, and public relations.

### **JRSM 8200-8209 - Special Topics in Journalism \*\***

**Credit Hours:** (1-3) **Description** Topics are varied. **PREREQUISITE(S):** Permission of instructor.

### **JRSM 8320 - Mass Media & Diversity**

**Credit Hours:** (3) **Description** Research and analysis of the relationship among mass media, women, and minorities.

### **JRSM 8330 - Social Media & Community Engagement**

**Credit Hours:** (3) **Description** Create campaigns and relationships that build organizational voice, serial storytelling, and working with a community to encourage

strong organization/brand-public relationships. Content creation using multiple technologies and platforms, including both social and traditional media. Students will be exposed to a variety of case studies and community examples for analysis.

### **JRSM 8350 - Advanced Multimedia Reporting**

**Credit Hours:** (3) **Description** Recent research findings in news reporting, writing and editing principles; practical experience in preparing finished news reports suitable for publication or dissemination in professional-level mass medium.

### **JRSM 8424 - Media Effects & Communication**

**Credit Hours:** (3) **Description** This course explores the social and psychological effects of media on viewers and how viewers reach to media content. It also explores the psychological aspects of human computer interaction (HCI) and computer mediated communication (CMC). **PREREQUISITE(S):** JRSM 7050 or permission of instructor.

### **JRSM 8530 - Visual Media Theory & Practice**

**Credit Hours:** 3 *Cross listing* JRSM 7530 **Description** Familiarization with in-depth interviews, focus groups, participant observation, and content analysis; practical experience in collecting and analyzing qualitative data. **PREREQUISITE(S):** Doctoral status. Standard Letter

### **JRSM 8700 - Individual Research**

**Credit Hours:** (3) **Description** Projects on non-thesis related topics of special interest to the student, ending in a completed research article or report. **PREREQUISITE(S):** Permission of instructor.

### **JRSM 8800 - Directed Indiv Readings**

**Credit Hours:** (3) **Description** Preparation of literature review for master's thesis with extensive bodies of writing in topic areas. May be taken to prepare scholarly papers on subjects of individual interest. **PREREQUISITE(S):** MATH 6635;

## JRSM 9000 - Dissertation

**Credit Hours:** 1-12 **Description** Preparation and development of a doctoral dissertation. **PREREQUISITE(S):** Permission of instructor. S/U/IP

## PBRL 6301 - Event Planning for PR

**Credit Hours:** (3) **Description** Development, execution and evaluation of events that support strategic communication goals.. Special attention will be given to the needs of the public relations industry. Hands on experience will be integrated into the curriculum. Standard Letter

## PBRL 6430 - Media Relations

**Credit Hours:** 3 *Cross listing* (same as PBRL 4430)  
**Description** Development of media relations skills, including advanced writing of collateral materials, presentations, pitching and media training. Hands-on experience will be integrated into the curriculum to include conducting press conferences, media interviews and media training. Industry standard strategic tools and techniques for successful media relationships will be explored. **PREREQUISITE(S):** Graduate status & permission of instructor

## PBRL 6431 - Music Promo/Public Relations

**Credit Hours:** (3) **Description** Examines publicity and promotion of artists and events within the music industry. Focuses on music journalism, advanced writing of collateral material, and planning and working special events for artists in various capacities.

## PBRL 6432 - Nonprofit Public Relations

**Credit Hours:** 3 *Cross listing* PBRL 4432 **Description** Examines the concepts, methods, and writing tactics that help nonprofit professionals strategically communicate and promote their organization's mission and goals. Explores various techniques and channels to communicate for nonprofits, and develop an academic, creative and strategic understanding of nonprofits. Standard Letter

## PBRL 6706 - Public Relations Ethics and Advocacy

**Credit Hours:** 3 **Description** An approach to ethics and advocacy through case studies and their application to the work of public relations professionals as they interact with employers, publics and society as a whole. Standard Letter

## PBRL 6803-6805 - Special Topics in Public Relation

**Credit Hours:** (3) **Description** Intensive study of a single critical issue or current topic. Topics may vary  
**PREREQUISITE(S):** Permission of instructor.

## STRM 6290 - Campaign Research & Planning

**Credit Hours:** 3 **Description** Examination of advertising and public relations research and hands-on experience in primary and secondary research including audience and stakeholder evaluation, sampling, instrument design, focus groups and interviews, data processing, analysis, and reporting for a real-world client. **PREREQUISITE(S):** Permission of instructor.

## STRM 6295 - Campaigns Implementation & Eval

**Credit Hours:** 3

**Description** Synthesizes knowledge from all prior major courses and applies it to the development of a strategic communications campaign in a real-world environment.

**PREREQUISITE(S):** Permission of instructor/

## Judaic Studies

### JDST 6840 - Israel/Antqty In Mdrnty

**Credit Hours:** (3) *Cross listing* (Same as ANTH 6840).  
**Description** (Same as ANTH 6840). Interdisciplinary examination of relationship between ancient traditions and modern issues in Israel. Emphasis on relationship between historical conditions, conflicts, and interconnections and new choices facing Israel.

### JDST 6841 - Biblical Archaeology

**Credit Hours:** (3) *Cross listing* (Same as ANTH 6841, ESCI 6841). **Description** (Same as ANTH 6841, ESCI 6841). Relationship between historical texts in Hebrew Bible and historical evidence from archaeological research in Israel and surrounding area. Emphasis on how archaeological evidence and Biblical narratives illuminate each other.

### JDST 7796 - Independent Study

**Credit Hours:** (3) **Description** Directed individual study or research. May be repeated once. May be repeated once.

**PREREQUISITE(S):** Completion of out-of-class learning contract and approval of the director of Bornblum Judaic Studies. Grades of A-F, or IP will be given.

## Languages and Literatures

### LALI 6010-6029 - Special Topics in Foreign Literatures

**Credit Hours:** (3) **Description** Topics are varied.

### LALI 6441 - Dante

**Credit Hours:** (3) **Description** Vita Nuova and Divina Commedia; presented in English. Offered off-numbered spring semesters. **PREREQUISITE(S):** MATH 7643.

### LALI 6493 - Contemporary French Lit

**Credit Hours:** (3) **Description** Emphasis on widely translated, well-known works by major French writers; presented in English translation.

### LALI 6890 - Literary Criticism

**Credit Hours:** (3) **Description** Study of the history and theory of literary criticism as exemplified by texts selected from various literary traditions. **PREREQUISITE(S):** MATH 6636.

### LALI 7780 - Indiv Studies Busn Lang

**Credit Hours:** (1-3) **Description** Directed individual study in selected areas of language and culture chosen in consultation with instructor. May be repeated for a maximum of 10 credit hours. **PREREQUISITE(S):** MATH 7654.

## Leadership

### LEAD 6000 - Educ/Schl/Am Society

**Credit Hours:** (3) Former: (EDFD 7003-8003) **Description** Interdisciplinary study of educational policies and practices in American society; role and function of the school and the teacher; analysis of major problems and issues facing contemporary public education. Five hours of school visitation

required. (Fulfills foundations requirement for graduate students seeking teacher licensure.)

### LEAD 6044 - SPED Law For Educators

**Credit Hours:** (3) **Description** Study of legal foundations of special education, dealing extensively with federal/state laws and regulations and with administrative and civil court actions in determining status of services to children with special needs. **PREREQUISITE(S):** LEAD 2010 or SPED 2000, or knowledge of the characteristics of special needs children and programs that serve them.

### LEAD 7000 - Intro To Educ Ldrshp \*\*

**Credit Hours:** (3) Former: (EDAS 7100) **Description** Theory and practice of educational leadership; scope, task, areas, processes and procedures, organization structure, problems and issues, and types of personnel needed in the United States. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### LEAD 7004 - Instructional Leadership \*\*

**Credit Hours:** (3) **Description** This is a capstone course in which candidates have opportunities to demonstrate that they have acquired the knowledge of theories, practices, and methodology used by effective instructional leaders to create a school culture that fosters high expectations and continuous growth in the academic achievement of all students.

### LEAD 7006 - Hist Am Ed Prek-12

**Credit Hours:** (3) **Description** Includes study of external historical influences, emphasizing theoretical interpretations, sources of policy, current issues of historical importance, and future expectations.

### LEAD 7050-7059 - Special Topics in Leadership

**Credit Hours:** (1-3) Former: (EDAS 7712-22/EDAS 8712-22) **Description** In-depth study of selected topics in educational leadership. May be repeated with change in topic.

### LEAD 7061 - Practicum In Ldrshp \*\*

**Credit Hours:** (1-3) Former: (EDAS 7170-8170) **Description** Practical short-term work experiences in various settings appropriate to student's career needs. May be repeated for



maximum of 9 credit hours. Grades of S, U, or IP will be given.

### **LEAD 7070 - Culminating Experience**

**Credit Hours:** (1-6) Former: (EDAS 7996) **Description** Capstone course using a problem-based, case-study approach. Offered odd-numbered spring semesters. Grades if S, U, or IP will be given.

### **LEAD 7080 - Rdgs/Res Phil of Educ**

**Credit Hours:** (1-3) **Description** Grades of A-F, or IP will be given.

### **LEAD 7081 - Rdnng/Rsrch High/Adlt Ed**

**Credit Hours:** (1-3) Former: (EDAS 7790-8790) **Description** Grades of A-F, or IP will be given.

### **LEAD 7082 - Rdnng/Rsrch Ed Ldrshp**

**Credit Hours:** (1-3) Former: (EDAS 7710-8710) **Description** Grades of A-F, or IP will be given.

### **LEAD 7083 - Rdgs/Rsrch Educ Plcy**

**Credit Hours:** (1-3) Former: (EDFD 7008-8008) **Description** Grades of A-F, or IP will be given.

### **LEAD 7084 - Rdnng/Rsrch Sci/Com Rel**

**Credit Hours:** (1-3) Former: (EDAS 7700-8700) **Description** Grades of A-F, or IP will be given.

### **LEAD 7085 - Rdnng/Rsrch Ed Supv**

**Credit Hours:** (1-3) Former: (EDAS 7750-8750) **Description** Grades of A-F, or IP will be given.

### **LEAD 7086 - Rdnng/Rsrch Fin/Bus Mgmt**

**Credit Hours:** (1-3) Former: (EDAS 7730-8730) **Description** Grades of A-F, or IP will be given.

### **LEAD 7087 - Rdnng/Rsrch Prsnl Negtn**

**Credit Hours:** (1-3) Former: (EDAS 7760-8760) **Description** Grades of A-F, or IP will be given.

### **LEAD 7088 - Rdnng/Rsrch Educ Law**

**Credit Hours:** (1-3) Former: (EDAS 7780-8780) **Description** (EDAS 7780-8780). Grades of A-F, or IP will be given. Offered fall semester. **PREREQUISITE(S):** Permission of the instructor

### **LEAD 7089 - Rdnng/Rsrch Plnt/Trnsptn**

**Credit Hours:** (1-3) Former: (EDAS 7740-8740) **Description** Grades of A-F, or IP will be given.

### **LEAD 7090 - Rdgs/Res Hist of Educ**

**Credit Hours:** (1-3) **Description** Grades of A-F, or IP will be given.

### **LEAD 7100 - Education & Community \*\***

**Credit Hours:** (3) Former: (EDAS 7000) **Description** Educational processes and policies in formal and non-formal community settings; inter-relationships among such settings; field-based, students will assess particular educational policy and its implications within the community. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **LEAD 7210 - Field Experiences \*\***

**Credit Hours:** (1-9) Former: (EDAS 7171-8171) **Description** Internship work experiences under supervision of practicing K-12 professional. May be repeated for maximum of 12 credits. Prospective enrollees must meet departmental deadlines for application. Grades of S, U, or IP will be given.

### **LEAD 7500 - Adult Lrng/Leadership \*\***

**Credit Hours:** (3) Former: (HIAD 7255-8255) **Description** Characteristics of adult learners; factors that affect learning, achievement, and motivation throughout the adult life-cycle; implications for educational leaders and human resource development. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **LEAD 7600 - Adult Experiential Learning**

**Credit Hours:** (1-15) **Description** The course focuses on experiential learning that is a process through which students develop knowledge, skills, and values from direct experiences outside a traditional academic setting

### LEAD 7996 - Thesis

**Credit Hours:** (1-6) **Description** Prospectus must be approved by the faculty committee directing this research study. Application for writing thesis must be filed with the Director of Graduate Studies. Grades of S, U, or IP will be given.

### LEAD 8000 - Specialist Culmn Exp

**Credit Hours:** (1-6) **Description** Thesis, internship, field of study, or special project designed under direction of student's committee; capstone experience in Education Specialist program. Grades of S, U, or IP will be given.

### LEAD 8001 - Educ Ldrship In Orgntns \*\*

**Credit Hours:** (3) Former: (EDAS 8800) **Description** Basic theories of organization and administration; historical and contemporary foundations of theories; implications of current theories and practices for organizational and human resource development. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### LEAD 8002 - Am Society & Ed Policy \*\*

**Credit Hours:** (3) Former: (EDFD 7001-8001) **Description** Historical evolution of major social issues and resulting educational policies; normative and empirical bases of educational principles and practices; sociocultural contexts of contemporary problems and issues.

### LEAD 8003 - Policy-Oriented Rsrch \*\*

**Credit Hours:** (3) **Description** Inquiry methods appropriate to educational policy research; empirico-inductive (grounded) and constructivist inquiry strategies emphasized.

**PREREQUISITE(S):** LEAD 8001 and LEAD 8002, EDPR 8541 or equivalent, or permission of the instructor. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor

### LEAD 8004 - Instructional Leadership

**Credit Hours:** (3) **Description** This is a capstone course in which candidates have opportunities to demonstrate that they have acquired the knowledge of theories, practices, and methodology used by effective instructional leaders to create a school culture which fosters high expectations and continuous growth in the academic achievement of all students.

### LEAD 8006 - Hist Am Ed Prek-12

**Credit Hours:** (3) **Description** Includes study of external historical influences, emphasizing theoretical interpretations, sources of policy, current issues of historical importance, and future expectations.

### LEAD 8050-8059 - Special Topics in Leadership

**Credit Hours:** (1-3) Former: (EDAS 7712-22/EDAS 8712-22) **Description** In-depth study of selected topics in educational leadership. May be repeated with change in topic.

### LEAD 8061 - Practicum In Ldrship

**Credit Hours:** (1-3) Former: (EDAS 7170-8170) **Description** Practical short-term work experiences in various settings appropriate to student's career needs. May be repeated for maximum of 9 credit hours. Grades of S, U, or IP will be given.

### LEAD 8070 - Culminating Experience

**Credit Hours:** (1-6) Former: (EDAS 7996) **Description** Capstone course using a problem-based, case-study approach. **PREREQUISITE(S):** Must be taken in last semester or by permission of department chair. Grades of S, U, or IP will be given.

### LEAD 8080 - Rdgs/Res Phil of Educ

**Credit Hours:** (1-3) **Description** Grades of A-F, or IP will be given.

### LEAD 8081 - Rdng/Rsrch High/Adlt Ed \*\*

**Credit Hours:** (1-3) Former: (EDAS 7790-8790) **Description** Grades of A-F, or IP will be given. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### LEAD 8082 - Rdng/Rsrch Ed Ldrship

**Credit Hours:** (1-3) Former: (EDAS 7710-8710) **Description** Grades of A-F, or IP will be given.

### LEAD 8083 - Rdgs/Rsrch Educ Plcgy

**Credit Hours:** (1-3) Former: (EDFD 7008-8008) **Description** Grades of A-F, or IP will be given.

### **LEAD 8084 - Rdnng/Rsrch ScI/Com Rel**

**Credit Hours:** (1-3) Former: (EDAS 7700-8700) **Description** Grades of A-F, or IP will be given.

### **LEAD 8085 - Rdnng/Rsrch Ed Supv**

**Credit Hours:** (1-3) Former: (EDAS 7750-8750) **Description** Grades of A-F, or IP will be given.

### **LEAD 8086 - Rdnng/Rsrch Fin/Bus Mgmt**

**Credit Hours:** (1-3) Former: (EDAS 7730-8730) **Description** Grades of A-F, or IP will be given.

### **LEAD 8087 - Rdnng/Rsrch Prsnl Negtn**

**Credit Hours:** (1-3) Former: (EDAS 7760-8760) **Description** Grades of A-F, or IP will be given.

### **LEAD 8088 - Rdnng/Rsrch Educ Law**

**Credit Hours:** (1-3) Former: (EDAS 7780-8780) **Description** Grades of A-F, or IP will be given.

### **LEAD 8089 - Rdnng/Rsrch Plnt/Trnsptn**

**Credit Hours:** (1-3) Former: (EDAS 7740-8740) **Description** Grades of A-F, or IP will be given.

### **LEAD 8090 - Rdnng/Res Hist of Educ**

**Credit Hours:** (1-3) **Description** Grades of A-F, or IP will be given.

### **LEAD 8100 - Education and Community\*\***

*Cross listing* Cross list with LEAD 7100 **Description**

(3) (EDAS 7000) **Description** Educational processes and policies in formal and non-formal community settings; inter-relationships among such settings; field-based, students will assess particular educational policy and its implications within

the community. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **LEAD 8140 - Planning Ed Change**

**Credit Hours:** (3) **Description** Characteristics of change in a variety of educational settings, emphasizing planning theory, implementing and managing change processes; specific variables that impact change efforts; analysis of planning and analysis tools; computer simulations and case studies.

### **LEAD 8210 - Field Experiences**

**Credit Hours:** (1-9) Former: (EDAS 7171-8171) **Description** Internship work experiences under supervision of practicing K-12 professional. May be repeated for maximum of 12 credits. Prospective enrollees must meet departmental deadlines for application. **PREREQUISITE(S):** Permission of instructor. Grades of S, U, or IP will be given.

### **LEAD 8500 - Adult Lrng/Leadership \*\***

**Credit Hours:** (3) Former: (HIAD 7255-8255) **Description** Characteristics of adult learners; factors that affect learning, achievement, and motivation throughout the adult life-cycle; implications for educational leaders and human resource development. Restricted to students enrolled in HIAD, LDPS, and CCTL programs or by permission of instructor.

### **LEAD 8600 - Adult Experiential Learning**

**Credit Hours:** (1-15) **Description** The course focuses on experiential learning that is a process through which students develop knowledge, skills, and values from direct experiences outside a traditional academic setting

### **LEAD 9000 - Dissertation \*\***

**Credit Hours:** (1-9) Former: (EDAS 9000) **Description** Grades of S, U, or IP will be given.

### **Leadership and Policy Studies**

#### **LDPS 7000 - Current Issue/Leadership**

#### **LDPS 7110 - Leadership Explr Sem**

**Credit Hours:** (3) Former: (EDAS 7400) **Description** Study of theories informing organization behavior, structure, problems, and issues occurring in organizations; discussion of

processes used by organizational leaders; students will explore personal beliefs and values, comparing them to theories and best practices to develop in depth understanding of self and personal perspective as educational leader.

### **LDPS 7112 - Mgmt Ed Grant/Project**

**Credit Hours:** (3) **Description** Planning and management of field-based educational projects, grants, and consulting services. Emphasis on team and group efforts; computer applications in project management.

### **LDPS 7120 - Supervisory Process**

**Credit Hours:** (1-6) Former: (EDAS 7050) **Description** Theory and methodology of educational supervision, with emphasis on instructional leadership; differences in roles for various supervisory personnel; project based.

### **LDPS 7121 - Personnel Admin**

**Credit Hours:** (3) Former: (EDAS 7160-8160) **Description** Educational personnel administration and policy including: human resource management, staffing goals, policies, recruitment, induction, roles, and professional development.

### **LDPS 7131 - School Business Mgmt**

**Credit Hours:** (1-3) Former: (EDAS 7130-8130) **Description** Business affairs of schools in accordance with laws and policies of local, state, and federal agencies; overview of legal and ethical standards; site budgeting and project management.

### **LDPS 7132 - School Finance**

**Credit Hours:** (3) **Description** Funding of public schools in the United States and other developed nations; analysis of various school funding models and related equity issues.

### **LDPS 7140 - Ldrshp Instructionl Improvmt**

**Credit Hours:** (3) **Description** Theory, research, policy, and practice in educational restructuring and participatory governance; develops skills required to systematically analyze and plan by making data-driven decisions to foster instructional improvement and organizational change necessary to support instruction.

### **LDPS 7141 - The Principalship \*\***

**Credit Hours:** (3) Former: (EDAS 7111-8111 & 7311-8311)

**Description** Role of the principal in school site leadership focusing on instructional leadership and organization and administration of the school's resources; projects for elementary, middle, junior, and secondary principals.

### **LDPS 7150 - Educational Law \*\***

**Credit Hours:** (3) Former: (EDAS 7180-8180) **Description** Federal and state statutes and local regulations applicable to education; legal requirements and their implications for educational operation; legal research methods and case law.

### **LDPS 7180 - Pltcs & Pwr Ed Ldrshp**

**Credit Hours:** (3) Former: (EDAS 7810-8810) **Description** Field study of techniques and strategies for leaders in education to discover sources of community power influencing education policy; emphasis on superintendent, school board, and central office leaders.

### **LDPS 7181 - Plcy Implmntn Ed Ldrshp**

**Credit Hours:** (3) Former: (EDAS 7811-8811) **Description** Development and implementation of administrative policy at the local, state, and national levels in relation to forces that shape thinking of policy-making bodies.

### **LDPS 7305 - Issues in Educ Policy**

**Credit Hours:** (3) **Description** Special issues of current interest related to American educational policies and practices.

### **LDPS 7311 - Issues Phil Educ**

**Credit Hours:** (3) Former: (EDFD 7021-8021) **Description** Critical examination of issues in the philosophy of education; history of issues and their effect on modern public schools.

### **LDPS 7320 - Urb Ed: Hst Cntmp Persp**

**Credit Hours:** (3) **Description** Sociological and cultural dimensions of urban society and education with emphasis on contemporary issues and recent policy developments.

### **LDPS 7330 - Race/Ethn/Gndr/Amer Ed**

**Credit Hours:** (3) **Description** Historical and contemporary study of educational practices and policies related to various ethnic and racial groups, as well as women in the United

States; various models of institutional and community forms of multicultural education.

### **LDPS 7350 - Policies/Politics Educ**

**Credit Hours:** (3) Former: (EDFD 7033-8033) **Description** Conceptual and empirical analyses of political and social issues related to US education.

### **LDPS 8111 - Ed Admin Perform Lab**

**Credit Hours:** (1-6) Former: (EDAS 7370-8370) **Description** Laboratory experiences including gaming and simulation to illustrate complex organizations, information systems, network planning and projection systems, and leadership assessment.

### **LDPS 8112 - Mgmt Ed Grant/Project**

**Credit Hours:** (3) **Description** Planning and management of field-based educational projects, grants, and consulting services. Emphasis on team and group efforts; computer applications in project management.

### **LDPS 8115 - Educ Ldrshp Sem**

**Credit Hours:** (3) Former: (EDAS 7510-8510) **Description** Problems and issues derived from trends in contemporary culture that impact on educational leadership; emphasis on instructional leadership.

### **LDPS 8121 - Personnel Admin**

**Credit Hours:** (3) Former: (EDAS 7160-8160) **Description** Educational personnel administration and policy including: human resource management, staffing goals, policies, recruitment, induction, roles, and professional development.

### **LDPS 8132 - School Finance**

**Credit Hours:** (3) **Description** Funding of public schools in the United States and other developed nations; analysis of various school funding models and related equity issues.

### **LDPS 8133 - Econ of Education**

**Credit Hours:** (3) Former: (EDAS 8220) **Description** Economic aspects of education in the United States and other developed nations.

### **LDPS 8140 - Ldrshp Instructionl Improvmnt \*\***

**Credit Hours:** (3) **Description** Theory, research, policy, and practice in educational restructuring and participatory governance; develops skills required to systematically analyze and plan by making data-driven decisions to foster instructional improvement and organizational change necessary to support instruction.

### **LDPS 8155 - Seminar in Ed Law \*\***

**Credit Hours:** (3) **Description** Analysis of current legislation and case law and its impact on education.

### **LDPS 8180 - Pltcs & Pwr Ed Ldrshp**

**Credit Hours:** (3) Former: (EDAS 7810-8810) **Description** Field study of techniques and strategies for leaders in education to discover sources of community power influencing education policy; emphasis on superintendent, school board, and central office leaders.

### **LDPS 8181 - Plcy Implmntn Ed Ldrshp**

**Credit Hours:** (3) Former: (EDAS 7811-8811) **Description** Development and implementation of administrative policy at the local, state, and national levels in relation to forces that shape thinking of policy-making bodies.

### **LDPS 8305 - Issues In Educ Policy \*\***

**Credit Hours:** (3) **Description** Special issues of current interest related to American educational policies and practices.

### **LDPS 8310 - Phil Anly & Educ Plcy**

**Credit Hours:** (3) Former: (EDFD 7022-8022) **Description** Exploration and use of philosophical analytical skills for assessing educational policies and practices.

### **LDPS 8311 - Issues Phil Educ**

**Credit Hours:** (3) Former: (EDFD 7021-8021) **Description** Critical examination of issues in the philosophy of education; history of issues and their effect on modern public schools.

### **LDPS 8320 - Urb Ed: Hst Cntmp Persp \*\***

**Credit Hours:** (3) **Description** Sociological and cultural dimensions of urban society and education with emphasis on contemporary issues and recent policy developments.

### **LDPS 8330 - Race/Ethn/Gndr/Amer Ed \*\***

**Credit Hours:** (3) **Description** Historical and contemporary study of educational practices and policies related to various ethnic and racial groups, as well as women in the United States; various models of institutional and community forms of multicultural education.

### **LDPS 8350 - Policies/Politics Educ**

**Credit Hours:** (3) Former: (EDFD 7033-8033) **Description** Conceptual and empirical analyses of political and social issues related to US education.

## **Linguistics**

### **LING 7101 - Intro To Linguistics I**

**Credit Hours:** (3) **Description** Nature of language; history of linguistic theory; morphology and syntax, concentrating on languages other than English. **PREREQUISITE(S):** MECH 3320, 3322.

### **LING 7174 - Spec Method/Lang Ed**

**Credit Hours:** (3) *Cross listing* (Same as ICL 7174) **Description** (Same as ICL 7174). Examines theoretical and practical issues relating to teaching of foreign languages K-12 through lectures, reading of current literature, class discussion, guest speakers, etc.; explores role of context in comprehension and learning, listening, reading, oral proficiency, writing, testing, culture, and curriculum. **PREREQUISITE(S):** MECH 3320, 3322. Grades of S, U, or IP will be given.

### **LING 7201 - Intro To Linguistics II**

**Credit Hours:** (3) **Description** Principles and applications of phonology, with major emphasis on languages other than English; historical linguistics, concentrating on Romance and other language families; psycholinguistics, sociolinguistics, semantics. **PREREQUISITE(S):** MECH 3351.

## **Literacy**

### **LITL 7000 - Literacy/English Lang Learners \*\***

**Credit Hours:** (3) **Description** Research based literacy teaching and assessment strategies/methods for the English language learner, including theories.

### **LITL 7304 - Writing Theory and Practice \*\***

**Credit Hours:** (3) **Description** This online course is designed to present an advanced study of writing techniques in the primary and secondary classroom.

### **LITL 7540 - Lit Inst in the Elem Schl \*\***

**Credit Hours:** (3) **Description** Foundations, issues, processes, and strategies relative to changes occurring with teaching of literacy; focus on linking theory to practice. Restricted to MS and EdD students.

### **LITL 7541 - Lit Assess and Intervtn \*\***

**Credit Hours:** (3) Former: (RDNG 7541) **Description** Principles of assessment, evaluation, and prognosis in literacy; formal and informal procedures and instruments used in assessing literacy and related cognitive abilities; multiple causation approach to literacy difficulties. **PREREQUISITE(S):** LITL 7540, or permission of the instructor.

### **LITL 7542 - Alt Procecd Reading Prob**

**Credit Hours:** (3) **Description** Application of differentiated instruction within a clinical setting to meet the needs of the struggling literacy learner. **PREREQUISITE(S):** LITL 7540 and LITL 7541 or permission of instructor.

### **LITL 7543 - Adv Lit Instr/Sp Lrnr**

**Credit Hours:** (3) **Description** Etiology of literacy disabilities unique to various types of handicapped children; planning and treatment selection related to gifted and talented, learning disabled, physically handicapped, and other categories of special learner.

### **LITL 7544 - Adolscnt Lit Instruc**

**Credit Hours:** (3) **Description** Research based theories and steps necessary for academic disciplines: techniques for improving vocabulary, cognition, study skills, and reading rate.

### **LITL 7545 - Tchg Lit Subject Areas \*\***

**Credit Hours:** (2) **Description** Methods, materials, and organizational patterns by which literacy skills are developed and improved through integration with teaching strategies in subject areas. Additional field hours required.

**PREREQUISITE(S):** TEP admission

### **LITL 7546 - Computr Appl/Lit Instr**

**Credit Hours:** (3) **Description** Incorporating computers in the reading classroom and curriculum development of educationally relevant literacy programs.

**PREREQUISITE(S):** ICL 7060 - ICL 8060 or permission of instructor.

### **LITL 7547 - Literacy Clinic**

**Credit Hours:** (3) **Description** Emphasis on practical experiences of clinical diagnosis and treatment.

**PREREQUISITE(S):** LITL 7540-LITL 8540 or permission of instructor. Grades of A-F, or IP will be given.

### **LITL 7548 - Adv Sem Reading Resrch**

**Credit Hours:** (3) **Description** Survey and analysis of reading research to create background information for study of selected topics in reading; translating research into practical applications in classroom and school. May be repeated for up to 6 hours. **PREREQUISITE(S):** EDPR 7521, EDPR 7523, EDPR 7541, or permission of instructor.

### **LITL 7549 - Foundtns Lang/Lit Dev**

**Credit Hours:** (2) **Description** Instructional techniques, curriculum, and materials for teaching literacy. Additional field hours required. **PREREQUISITE(S):** Admission to TEP. Restricted to licensure-only or MAT secondary students.

### **LITL 7550 - Sem in Analyzing Lit Res**

**Credit Hours:** (3) **Description** This online course is designed to develop students' ability to survey, summarize, and analyze literacy research and translate research into practical applications in classrooms and schools.

### **LITL 7553 - Literacy Dev K-4 \*\***

**Credit Hours:** (3) **Description** Teaching and assessing literacy development in grades K-4 with focus on major theories and current research. Additional field hours required. Restricted to students seeking licensure.

**PREREQUISITE(S):** TEP admission.

### **LITL 7554 - Literacy Dev 5-8**

**Credit Hours:** (3) **Description** Furthering literacy development in grades 5-8 with emphasis on teaching and assessment grounded in current research and theory.

Additional field hours required. Restricted to students seeking licensure. **PREREQUISITE(S):** TEP admission

### **LITL 7560 - Literacy Leader and Coach \*\***

**Credit Hours:** (3) **Description** Develops knowledge, skills and dispositions necessary for successful literacy coaching.

### **LITL 7561 - Literacy Coach Practicum**

**Credit Hours:** (3) **Description** Application of knowledge about literacy coaching in a practical classroom setting.

### **LITL 7809 - Literacy Research Practicum \*\***

**Credit Hours:** (3) **Description** Participation is required in a supervised literacy research practicum; the experience includes either a clinical or field-based component. Grades of S, U, or I will be given.

### **LITL 8000 - Literacy/English Lang Learners \*\***

**Credit Hours:** (3) **Description** Research based literacy teaching and assessment strategies/methods for the English language learner, including theories.

### **LITL 8155 - Hist Literacy Instruction**

**Credit Hours:** (3) **Description** This course considers the history of literacy from three perspectives: 1) as a cognitive, social and cultural activity, 2) the teaching of literacy, and 3) the study of literacy from the advent of the written work to the present. Restricted to candidates admitted to doctoral program.

### **LITL 8304 - Writing Theory and Practice \*\***

**Credit Hours:** (3) **Description** This online course is designed to present an advanced study of writing techniques in the primary and secondary classroom.

### **LITL 8540 - Lit Inst in the Elem Schl**

**Credit Hours:** (3) **Description** Foundations, issues, processes, and strategies relative to changes occurring with teaching of literacy; focus on linking theory to practice. Restricted to MS and EdD students.

### **LITL 8541 - Lit Assess and Intervtn \*\***

**Credit Hours:** (3) **Description** Principles of assessment, evaluation, and prognosis in literacy; formal and informal procedures and instruments used in assessing literacy and related cognitive abilities; multiple causation approach to literacy difficulties. **PREREQUISITE(S):** Teaching experience and LITL 7540, or permission of the instructor.

### **LITL 8542 - Alt Procead Reading Prob**

**Credit Hours:** (3) **Description** Application of differentiated instruction within a clinical setting to meet the needs of the struggling literacy learner. **PREREQUISITE(S):** LITL 7540 and LITL 7541 or permission of instructor.

### **LITL 8543 - Adv Lit Instr/Sp Lrn**

**Credit Hours:** (3) **Description** Etiology of literacy disabilities unique to various types of handicapped children; planning and treatment selection related to gifted and talented, learning disabled, physically handicapped, and other categories of special learner. **PREREQUISITE(S):** .

### **LITL 8544 - Adolscnt Lit Instruc**

**Credit Hours:** (3) **Description** Research based theories and steps necessary for academic disciplines: techniques for improving vocabulary, cognition, study skills, and reading rate. May be repeated with a change in topic. See online class listings for topics.

### **LITL 8546 - Computr Appl/Lit Instr**

**Credit Hours:** (3) **Description** Incorporating computers in the literacy classroom and curriculum development of educationally relevant literacy programs. **PREREQUISITE(S):** SCMS 7310 or permission of instructor.

### **LITL 8547 - Literacy Clinic**

**Credit Hours:** (3-6) **Description** Emphasis on practical experiences of clinical diagnosis and treatment. **PREREQUISITE(S):** LITL 7540-LITL 8540 or permission of instructor.

### **LITL 8548 - Adv Sem Reading Resrch**

**Credit Hours:** (3-6) **Description** Survey and analysis of reading research to create background information for study of selected topics in reading; translating research into practical applications in classroom and school. May be repeated for up to 6 hours. **PREREQUISITE(S):** EDPR 7521,EDPR 7523 ,EDPR 7541 or permission of instructor.

### **LITL 8549 - Theoretical Models Read**

**Credit Hours:** (3) **Description** Explores extant theoretical models of the reading process; appropriate for advanced graduate students interested in reading/literacy education, special education, educational psychology, early childhood, and elementary education. **PREREQUISITE(S):** Permission of instructor.

### **LITL 8550 - Sem in Analyzing Lit Res**

**Credit Hours:** (3) **Description** This online course is designed to develop students' ability to survey, summarize, and analyze literacy research and translate research into practical applications in classrooms and schools.

### **LITL 8551 - Directed Readings Lit**

**Credit Hours:** (1-3) **Description** Individually directed readings culminating in synthesis of ideas. May be repeated with change in topic for 9 credits. **PREREQUISITE(S):** Permission of instructor. Grades of S, U, or I will be given.

### **LITL 8552 - Research In Literacy**

**Credit Hours:** (1-6) **Description** Collaborative research with faculty, including planning, design, management, analysis, and reporting of research. May be repeated for a maximum of 12 credit hours. **PREREQUISITE(S):** Minimum of 12 hours in concentration and permission of instructor Grades of S, U, or I will be given.

### **LITL 8560 - Literacy Leader and Coach \*\***

**Credit Hours:** (3) **Description** Develops knowledge, skills and dispositions necessary for successful literacy coaching.

### **LITL 8561 - Literacy Coach Practicum**

**Credit Hours:** (3) **Description** Application of knowledge about literacy coaching in a practical classroom setting.



### LITL 8580 - Comp:Theory/Practice

**Credit Hours:** (3) **Description** Provides in-depth knowledge of theory, research and pedagogy as related to the field of composition in K-12 education. Restricted to candidates admitted to doctoral program.

### LITL 8585 - Issues in Urban Literacy

**Credit Hours:** (3) **Description** Provides in-depth knowledge of scientific research on the development of literacy skills in urban and high-poverty settings. Restricted to candidates admitted to doctoral program.

### LITL 8590 - Thry/Prac Fam Lit Home Sch

**Credit Hours:** (3) **Description** This course will have two foci: family literacy as a descriptor of practices which occur between family members and as programs aimed at increasing children's academic success through parental involvement and education. Restricted to candidates admitted to doctoral program.

### LITL 8809 - Literacy Research Practicum \*\*

**Credit Hours:** (3) **Description** Participation is required in a supervised literacy research practicum; the experience includes either a clinical or field-based component. Grades of S, U, or I will be given.

### LITL 8854 - Lang Inqry Lit Res/Tchg

**Credit Hours:** (3) **Description** A review and analysis of linguistic approaches to studies of language structures and functions in literacy classrooms, including discourse analyses, inquiry based instructional methods, and descriptions of literary genres. Restricted to candidates admitted to doctoral program.

## Management

### MGMT 7030 - Management & Orgnzttn

**Credit Hours:** (3) Former: (7000) **Description** (7000). Comprehensive analysis of concepts and applications required for effective performance of the manager's job in organizations with varied environments; management as a sub-function of the total organizational system interacting with objectives, planning, and control; organizational design and interpersonal relationships; nature of operations management.

### MGMT 7125 - Org Behavior Internatnl

**Credit Hours:** (3) **Description** Concepts and theories needed to understand the process of managing people, work groups, and organizations in a global environment; role of cultural differences relevant in international context.

### MGMT 7130 - Org Behav & Performance

**Credit Hours:** (3) **Description** Study of human behavior, attitudes, and performance within an organizational setting; motivation, leadership, communication, group dynamics, organizational change and development, power and politics, conflict management, cross-cultural issues; applications of theory, methods, and principles from behavioral sciences; study of individuals, groups, structure, and process to enhance organizational performance. NOTE: Open to degree-seeking students only. NOTE: Open to degree-seeking students only

### MGMT 7135 - Seminar in Leadership \*\*

**Credit Hours:** (2) **Description** Theoretical and practical consideration of leadership in high performing business organizations; detailed analysis of relevant organizational behavior concepts; particular focus on theories of motivation, styles of leadership, and emotional intelligence.

### MGMT 7136 - Exec. Seminar in Leadership

**Credit Hours:** (3) **Description** Theoretical and practical consideration of leadership in high performing business organizations; team building; detailed analysis of relevant organizational behavior concepts; particular focus on theories of motivation, styles of leadership, and emotional intelligence. NOTE: only open to those enrolled in the Executive MBA program. NOTE: only open to those enrolled in the Executive MBA program.

### MGMT 7160 - Global Strategic Mgmt \*\*

**Credit Hours:** (3) Former: (7410) **Description** Decisions and actions for the development and implementation of long-term plans that determine organizational performance; role of top management decision making in establishing the firm's mission; focus on strategic analysis of alternative actions; evaluation of environmental conditions, industry characteristics, and organizational capabilities in determining strategy in a global context.

### MGMT 7161 - Intl Business Strategy

**Credit Hours:** (3) **Description** Business strategy from perspective of general manager in a multinational enterprise, promoting long-term success of the organization; heavy emphasis on case study; includes management of multinational enterprise, strategic thinking in a global context, internal firm analysis, industry and competitor analysis, and related international strategy issues.

### **MGMT 7170 - International Mgmt**

**Credit Hours:** (3) **Description** Foreign operations of American firms, impact of foreign competition on the domestic market, and management of multinational enterprises; identification, analysis, and resolution of managerial issues in multinational business operations.

### **MGMT 7173 - Executive Communications**

**Credit Hours:** (3) **Description** Theory of communication essential to management with written, oral, and interpersonal applications; use of case problems to develop effective, efficient, and ethical communication strategies; impact of communication technology; intercultural communication; collection, analysis, and organization of primary and secondary data, followed by written and oral presentations.

### **MGMT 7210 - Sem Industrl Relations**

**Credit Hours:** (3) **Description** An in-depth examination of selected problems in labor management relations; emphasis on an understanding of past practices as well as current trends that relate to present-day activities in industrial relations.

### **MGMT 7220 - Semn Humn Res Mgmt I**

**Credit Hours:** (3) **Description** Problems and issues deriving from movements and trends in the management of human resources caused by changing laws, union activities, and the demands of our culture. The student is required to select one or more recent concepts or problems for intensive study and critical analysis.

### **MGMT 7250 - Strategic Human Captl Mgmt**

**Credit Hours:** (3) **Description** Theories, research, and practice in managing human resources strategically in business organizations. Topics include strategic HRM and planning, legal environment and managing diversity, job analysis, job design, recruitment, selection, training and development, performance management, turnover, and retention.

### **MGMT 7260 - Semn Humn Res Mgmt II**

**Credit Hours:** (3) **Description** Concepts and issues concerning understanding of jobs and performance of jobs; job analysis that creates foundation for selection and performance; use of job requirements for developing selection criteria and performance standards. **PREREQUISITE(S):** MATH 3120.

### **MGMT 7270 - Ventur/Bldg/Sust Succ Enterp**

**Credit Hours:** (3) **Description** The field of business venturing, which emphasizes the start-up phases of entrepreneurship, is a popular and growing area of the business curriculum. This course is designed to accomplish the fundamental objectives of learning how to design, implement, and sustain a business around a new business idea. This course provides a foundational introduction to the process of venturing for MBA students.

### **MGMT 7421 - Self Leadership/Executives**

**Credit Hours:** (2) **Description** Application of critical thinking skills to the major theories, concepts, and principles of self leadership; emphasizes understanding each stage of the self leadership process, applying critical thinking skills to each element of self leadership, and the overall logic of self leadership.

### **MGMT 7422 - Sem Organizational Thry**

**Credit Hours:** (3) **Description** Major historical and contemporary theories of organization; emphasis on study of organizational structures, principles, techniques, and processes as they relate to management of organizations. Individual studies will be pursued with group analysis and discussion at regular class meetings.

### **MGMT 7423 - Sem/Organztl Behavr II**

**Credit Hours:** (3) **Description** Employee-organization linkages, theories of human stress and cognition in organizations; cognitive processes in organizational contexts including social cognition, commitment, self-regulation, intrinsic-extrinsic rewards, coping with stressful organizational and life events, and determinants of pro-social behavior in work contexts.

### **MGMT 7500 - Sem/Strategic Mgmt**

**Credit Hours:** (3) **Description** Literature of strategic management, including contributions of other fields to strategic management. May be repeated for a maximum of 6 credit hours when topics change

### **MGMT 7506 - Sem/Indstry & Comp Anlyis**

**Credit Hours:** (3) **Description** Competitive environment of business organizations; emphasis on understanding industry structure and the positioning of firms in relation to major rivals.

### **MGMT 7508 - Sem/Corporate Strategy**

**Credit Hours:** (3) **Description** Research literature on corporate-level strategy topics; corporate strategy as well as decision and implementation processes and problems; strategic issues of multibusiness firms.

### **MGMT 7510 - Sem/Strtgy & Plan Rsrch**

**Credit Hours:** (3) **Description** Specialized areas in strategic management review of relevant literature and methodology; emphasis on problem determination, analysis, and preparation of comprehensive reports and research proposals.

### **MGMT 7520 - Semn Org Change Mgmt**

**Credit Hours:** (3) **Description** Diagnosis of problems reducing organizational effectiveness, techniques for introducing and implementing change in organizations, theoretical basis of organizational development, and rationale for organizational development.

### **MGMT 7910 - Problems In Mgmt**

**Credit Hours:** (1-6) **Description** Directed independent research projects in an area selected by the student with approval of the staff member supervising and permission of Faculty Director. Proposed plan of study must be approved prior to enrollment. Grades of A-F, or IP will be given. May be repeated for a maximum of 6 credit hours when topics change

### **MGMT 7940-7949 - Special Topics in Management**

**Credit Hours:** (3) **Description** Topics vary.

### **MGMT 7996 - Thesis**

**Credit Hours:** (3-6) **Description** Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Faculty Director of Master's Programs. Grades of S, U, or IP will be given.

### **MGMT 8220 - Sem in Humn Resource Mgmt I**

**Credit Hours:** (3) **Description** Problems and issues in human resource management such as staffing organizations, managing diversity in the workplace, and employee training. Students are required to select one or more recent concepts or problems for intensive study and critical analysis.

### **MGMT 8260 - Semn in Humn Resource Mgmt II**

**Credit Hours:** (3) **Description** Problems and issues in human resource management such as staffing organizations, managing diversity in the workplace, and employee training. Students are required to select one or more recent concepts or problems for intensive study and critical analysis.  
**PREREQUISITE(S):** Permission of instructor

### **MGMT 8421 - Sem/Organztl Behavr I**

**Credit Hours:** (3) **Description** Individual and group behavior within work organizations; emphasis on the study of behavioral science concepts and research and their applications to management of organizations. Individual studies will be pursued with group analysis and discussion at regular class meetings. **PREREQUISITE(S):** Permission of instructor

### **MGMT 8422 - Sem Organizational Thry**

**Credit Hours:** (3) **Description** Major historical and contemporary theories of organization; emphasis on study of organizational structures, principles, techniques, and processes as they relate to management of organizations. Individual studies will be pursued with group analysis and discussion at regular class meetings.

### **MGMT 8423 - Sem/Organztl Behavr II**

**Credit Hours:** (3) **Description** Employee-organization linkages, theories of human stress and cognition in organizations; cognitive processes in organizational contexts including social cognition, commitment, self-regulation, intrinsic-extrinsic rewards, coping with stressful

organizational and life events, and determinants of pro-social behavior in work contexts. **PREREQUISITE(S):** Permission of instructor

### **MGMT 8500 - Sem/Strategic Mgmt**

**Credit Hours:** (3) **Description** Literature of strategic management, including contributions of other fields to strategic management. **PREREQUISITE(S):** Permission of instructor

### **MGMT 8506 - Sem/Industry & Comp Anlys**

**Credit Hours:** (3) **Description** Competitive environment of business organizations; emphasis on understanding industry structure and the positioning of firms in relation to major rivals. Repeatable by permission

### **MGMT 8508 - Sem/Corporate Strategy**

**Credit Hours:** (3) **Description** Research literature on corporate-level strategy topics; corporate strategy as well as decision and implementation processes and problems; strategic issues of multibusiness firms.

### **MGMT 8510 - Sem/Strtg & Plan Rsrch**

**Credit Hours:** (3) **Description** Specialized areas in strategic management review of relevant literature and methodology; emphasis on problem determination, analysis, and preparation of comprehensive reports and research proposals. **PREREQUISITE(S):** permission of instructor.

### **MGMT 8520 - Semn Org Change Mgmt**

**Credit Hours:** (3) **Description** Diagnosis of problems reducing organizational effectiveness, techniques for introducing and implementing change in organizations, theoretical basis of organizational development, and rationale for organizational development.

### **MGMT 8910 - Problems In Mgmt**

**Credit Hours:** (1-6) **Description** Directed independent research projects in an area selected by the student with approval of the staff member supervising and permission of Faculty Director. Proposed plan of study must be approved prior to enrollment. Grades of A-F, or IP will be given.

### **MGMT 8921 - Sem Mgmt Research**

**Credit Hours:** (3) **Description** Some of the statistical techniques available to the business researcher, including contingency tables, bivariate correlation analysis, regression analysis, ANOVA, discriminant analysis, and factor analysis; use of computerized statistical packages and interpretation of the results of these packages.

### **MGMT 8940-8949 - Special Topics in Management**

**Credit Hours:** (3) **Description** Topics vary.

### **Marketing**

#### **MKTG 6151 - Advanced Marketing Analytics**

**Credit Hours:** 3 **Description** Modern marketing depends on using data to generate novel insights about the marketing environment and support decision making. This course will introduce students to commonly used analytical tools in areas such as: segmentation, targeting and positioning, satisfaction management, customer choice, product and pricing decisions, customer lifetime value, and text analysis for product/service management. Students will learn by applying these tools to actual business situations and real-world data. **PREREQUISITE(S):** SCMS 3711 or equivalent Standard Letter

#### **MKTG 6250 - Behavioral Research for Marketing Organizations**

**Credit Hours:** 3 **Description** Human judgment and decision making is complicated. This course will introduce students to a variety of models and behavioral research methods today's marketers are using to gain deeper understanding of the psychological processes underlying consumer choice. Covered topics include: basics of experimental design, A/B testing, behavioral pricing, and the application of biometric research tools, such as eye-tracking, EEG, and facial coding in response to marketing research questions. **PREREQUISITE(S):** SCMS 3711 or equivalent Standard Letter

#### **MKTG 6350 - Digital and Social Media Marketing Analytics**

**Credit Hours:** 3 **Description** Students will learn the steps to using web and social media analytics to improve site

design, bolster paid and organic search performance, increase lead quality and optimize conversion rates, engage in listening strategies, and improve overall return on digital marketing investment. Topics covered will include use of A/B testing, multivariate modeling, and AI in creating more effective, personalized digital marketing campaigns. The course will emphasize experiential learning, including application of leading digital marketing management and analytics tools to real data, via live cases and simulations. **PREREQUISITE(S):** SCMS 3711 or equivalent Standard Letter

### **MKTG 7060 - Marketing Management**

**Credit Hours:** (3) **Description** For graduate students with undergraduate degrees in fields other than business administration. Marketing management as it relates to product, price, place, and promotional activities in both profit and nonprofit organizations; external environment as it affects marketing. May be repeated for a maximum of 6 credit hours when topics change

### **MKTG 7140 - Global Strategic Marketing \*\***

**Credit Hours:** (3) **Description** Marketing strategy and in-depth analysis of issues impacting global management of marketing, including: interrelationships among global business environments and strategies, analysis value creating global strategies, competitive intelligence gathering, customer segment analysis, integrated marketing technologies, customer relationship management.

### **MKTG 7170 - Multinational Mktg Sem**

**Credit Hours:** (3) **Description** Emphasis on the cross-cultural aspects of multinational marketing through case studies and individual research; execution of marketing concepts and theories in different cultures and environments; similarities and differences of applications and results.

### **MKTG 7213 - Research Methodology**

**Credit Hours:** (3) **Description** Business research methods and tools; exploratory, descriptive, and causal research designs; primary and secondary sources of data; hands on experience with univariate and multivariate analysis techniques; emphasis on the interpretation and communication of research findings to aid decision makers.

**PREREQUISITE(S):** Permission of instructor

### **MKTG 7230-7239 - Special Topics in Marketing and Supply Chain Management**

**Credit Hours:** (3) **Description** Special study of problems in marketing. Topics areas change each semester as determined by relevant developments in marketing.

### **MKTG 7251 - Ethics In Business**

**Credit Hours:** (1.5) **Description** Ethical frameworks, theories, and definitions available for use in ethical business decision-making; legalization of business ethics, and processes involved in developing a business code of ethics; ability to recognize and identify ethical issues in business decision-making emphasized.

### **MKTG 7510 - Negotiation Strategies**

**Credit Hours:** (3) **Description** Application of negotiation strategies and tactics in a variety of business, non-profit, and political environments; emphasis on collaborative and competitive styles of negotiating. **PREREQUISITE(S):** Permission of the Faculty Director of the Master's Programs

### **MKTG 7511 - Market Driven Quality**

**Credit Hours:** (3) **Description** Application of TQM principles and techniques in marketing operations; emphasis on measuring and analyzing quality from customer's perspective. **PREREQUISITE(S):** Permission of the Faculty Director of the Master's Programs

### **MKTG 7520 - Medical Dev New Prod Dev**

**Credit Hours:** (3) **Description** Covers strategic planning and policy for new products, opportunity analysis, idea generation and concept development, project evaluation, product design and development, prototyping and testing, product launch and commercialization, and various product management tools. **PREREQUISITE(S):** MKTG 7140 SCMS 7315 HADM 7718

### **MKTG 7540 - Applied Consumer Behavior**

**Credit Hours:** (3) **Description** Application of basic and advanced concepts of consumer behavior in business to consumer and business to business contexts; application of value based marketing to acquisition, development and maintenance of profitable customer relationships; psychological underpinnings of consumer behavior; exploring

consumer behavior in a multi cultural environment.  
**PREREQUISITE(S):** MKTG 7140 or equivalent.

### **MKTG 7542 - Retail Marketing Strategy**

**Credit Hours:** (3) **Description** Focus on strategic role of retailing in the distribution of consumer goods and services; understanding consumer insights and execution of critical factors for building retail brands; role of new technology and media in developing multi channel retailing strategies.  
**PREREQUISITE(S):** MKTG 7140 or equivalent.

### **MKTG 7544 - Integ Mktg Comm/Branding**

**Credit Hours:** (3) **Description** Application of theories in marketing communications and marketing psychology to understanding consumers responses to new media; study changing media trends; study theories on branding such as brand personalities, branding services, people as brands and brand communities; building and measuring brand equity; leveraging brands for brand extension and managing a brand portfolio in a global context. **PREREQUISITE(S):** MKTG 7140 or equivalent

### **MKTG 7546 - Mktg in Digital Environment**

**Credit Hours:** (3) **Description** Studying and applying marketing orientation in a digital environment; understanding emerging business models for the online market space; studying and implementing eCommerce project management techniques; understand the converging trends in the digital world in relation to consumers and consumer segments.  
**PREREQUISITE(S):** MKTG 7140 or equivalent

### **MKTG 7555 - Creativity and Innovation \*\***

**Credit Hours:** (2) **Description** Focused analysis and discussion of imaginative, creative processes used for innovation in business contexts; explores theoretical underpinnings of creativity and innovation, with special attention to environmental effects on individual and group creativity; creativity knowledge is applied in areas of ideation, innovation management, and product design. May be repeated for a maximum of 6 credit hours when topics change

### **MKTG 7910 - Problems in Marketing**

**Credit Hours:** (1-6) **Description** Directed independent research projects in an area selected by the student with the approval of the faculty member supervising and permission of the Faculty Director. Proposed plan of study must be approved

by Ph.D. coordinator prior to enrollment. Grades of A-F, or IP will be given.

### **MKTG 7996 - Thesis**

**Credit Hours:** (3-6) **Description** Grades of S, U, or IP will be given.

### **MKTG 8215 - Ethical Criticism**

**Credit Hours:** (3) **Description** Ethical analyses and critiques of scientific writing; deconstructive strategies of reading; emphasis on literary and rhetorical tactics employed in presentation of marketing theory.

### **MKTG 8216 - Measurement/Stuc Equa**

**Credit Hours:** (3) **Description** Theoretical and methodological issues in research design, measurement, and analysis; development of measures of constructs and empirical assessment of measurement properties; model development and testing to expand theory; covariance structure analysis to test measurement and structural models.  
**PREREQUISITE(S):** SCMS 8540 or equivalent.

### **MKTG 8217 - Theory Const & Eval**

**Credit Hours:** (3) **Description** Analyses of development of theory in marketing and management; critiques of dominant paradigms; examination of tenets of philosophy of science as they relate to theory generation and testing.  
**PREREQUISITE(S):** Permission of instructor.

### **MKTG 8222 - Adv Mktg Management**

**Credit Hours:** (3) **Description** Seminar focusing on the major research streams in marketing management; analyses of foundations of marketing management theory; emphasis on assessing the conceptual development of marketing constructs; examination of current journal articles to assess new research approaches to improve marketing theory and practice.  
**PREREQUISITE(S):** Permission of instructor.

### **MKTG 8223 - Adv Consumer Behavior**

**Credit Hours:** (3) **Description** Survey of theoretic and methodological contributions of consumer behavior research in areas of human information processing, information search, complex decision-making, motivation, and attitude; emphasis on tracing major research streams in the literature through

examination of current journal articles; research paper required. **PREREQUISITE(S):** Permission of instructor.

### **MKTG 8225 - Adv Topics Marketing Mgmt**

**Credit Hours:** (3) **Description** Seminar on the primary research issues in the field of marketing management; emphasis on the conceptual development of marketing constructs. Course includes discussion and analysis of both conventional and state-of-the art research approaches to the investigation of problems in marketing management. **PREREQUISITE(S):** Permission of instructor.

### **MKTG 8230-8239 - Special Topics in Marketing and Supply Chain Management**

**Credit Hours:** (3) **Description** Special study of problems in marketing. Topics areas change each semester as determined by relevant developments in marketing.

### **MKTG 8910 - Problems in Marketing**

**Credit Hours:** (1-6) **Description** Directed independent research projects in an area selected by the student with the approval of the faculty member supervising and permission of the Faculty Director. Proposed plan of study must be approved by Ph.D. coordinator prior to enrollment. Grades of S, U, or IP will be given.

### **MKTG 8930 - Adv Research Methods**

**Credit Hours:** (3) **Description** Detailed coverage of topics relevant to conducting research in behavioral sciences, particularly marketing, including sampling techniques; experimental design concepts (blocking designs, multi-factor, use of repeated measures); development and evaluation of measurement instruments; application of multivariate techniques to marketing problems. **PREREQUISITE(S):** SCMS 8540 or equivalent

## **Marketing Education**

### **MKED 7010 - Coop Occupation Educ**

**Credit Hours:** (3) Former: (MKED 6610). **Description** (MKED 6610). Study of occupational education programs that use work experience coordinated with related in-school instruction to provide clear preparation in vocational education. (Spring semester only) (Spring semester only)

### **MKED 7630 - Inst Dvp Mktg/Mrch/Mgmt**

**Credit Hours:** (3) **Description** Developing instructional materials and techniques for high school and post-secondary marketing education programs. (Fall semester only.) **PREREQUISITE(S):** MKED 7010 and MKED 7641.

### **MKED 7641 - Tech Coord Mktg Educ**

**Credit Hours:** (3) Former: (MKED 6641). **Description** (MKED 6641). Selecting training agencies; developing job analyses; selecting and briefing the training supervisor; selecting and working with advisory committees; utilizing other community and resources.

### **MKED 7650 - Res Prblms In Mked**

**Credit Hours:** (1) **Description** Individual investigation and reports of research problems. **PREREQUISITE(S):** Permission of instructor.

### **MKED 7700 - Marketing Ed Stdy Tour**

**Credit Hours:** (1) Former: (MKED 6700). **Description** (MKED 6700). An opportunity to gain on-the-scene knowledge about specific areas of instruction within marketing education. May be repeated for a maximum of 3 credit hours; however, the student should consult with major advisor to determine the maximum credit that may be applied to a degree program. **PREREQUISITE(S):** Permission of instructor.

### **MKED 7993 - Occupational Exp Pract**

**Credit Hours:** (1) **Description** Practical experience in occupational specialty area for certification and/or occupational updating; employment in occupational specialty area; comprehensive research report. **PREREQUISITE(S):** Permission of instructor. Grades of S, U, or IP will be given.

## **Mathematics**

### **MATH 6010-6019 - Special Topics in Mathematics and Statistics**

**Credit Hours:** (1-3) **Description** Topics are varied.

### **MATH 6020 - Actuarial Mathematics**

**Credit Hours:** (3) **Description** Preparation for SOA Exam P, CAS Exam 1; conditional probability, dependence, combinatorial principles, random variables, discrete and continuous probability distributions, expectations, marginal distributions, risk management concepts. **COREQUISITE(S):** MATH 6635 Grades of S, U, or IP will be given.

### **MATH 6022 - Fin Math I/Theory of Interest**

**Credit Hours:** (3) **Description** Preparation for SOA Exam FM, CAS Exam 2. Interest rates and time value of money, annuity valuation, loan repayment, bond valuation and amortization, internal rates of return, the term structure of interest rates, asset liability management, duration and immunization.

### **MATH 6025 - Fin Math II/Derivatives**

**Credit Hours:** (3) **Description** Preparation for SOA Exam FM, CAS Exam 2. Financial risk concepts; derivatives, forwards, futures, short and long positions, call and put options, spreads, collars, hedging, arbitrage, swaps. Definitions and evaluations of basic derivatives contracts and trading strategies.

### **MATH 6028 - Models for Fin Econ/Options**

**Credit Hours:** (3) **Description** Various aspects of theory and practice of options pricing and related topics: put-call parity, binomial trees, arbitrage, risk-neutral pricing, random walk model, lognormality and the binomial model, estimating volatility, Black-Scholes formula, option Greeks, market making, delta hedging, Asian, barrier, compound, gap and exchange options.

### **MATH 6030 - Model Fin Econ/Adv Pre Thry**

**Credit Hours:** (3) **Description** Continuation of MATH 6028; lognormal model of stock prices, distribution of asset prices, risk neutral valuation, true valuation, simulated stock prices, Monte Carlo valuation, geometric Brownian motion, Sharpe ratio, Ito's lemma, Black-Scholes equation, all-or-nothing options, measurement and behavior of volatility, bond price models, Black-Derman-Toy model.

### **MATH 6050 - Transformational Geometry**

**Credit Hours:** (3)

**Description** Study of Euclidean geometry based on the Erlangen Program. The course develops Euclidean geometry

based on metric axioms, develops isometries, similarities, symmetry groups. This development is then reversed as isometries and similarities are then used to define Euclidean geometry. This transformational approach is then used to develop several topics including the nine point circle, the Euler line, the orthic triangle, the Fermat point, the Napoleon tessellation, the Circle of Apollonius, ornamental groups, Rosetta groups, frieze groups, and wallpaper groups.

**PREREQUISITE(S):** Department Permit Required.

### **MATH 6051 - Postsecondary Proof Methods**

**Credit Hours:** (3) **Description** Enhance mathematical communication skills by studying methods of proof and adaptation of proofs for teaching purposes. Topics of study will include logic, set theory, relations, functions, combinatorics, number theory, Peano axioms and the axiom of induction. **PREREQUISITE(S):** Departmental Permit required

### **MATH 6083 - Dynamical Systems/Chaos**

**Credit Hours:** (3) **Description** Examples of dynamic systems, one dimensional maps (periodic points, stability of fixed points, sensitivity dependence on initial conditions), two dimensional maps (sinks, sources and saddles, linear and nonlinear maps, Julia and Mandelbrot sets), chaos (Lyapunov exponents, chaotic orbits, basins of attraction), fractals (probabilistic and deterministic constructions, fractals dimension), differential equations (one and higher dimensional linear equations, periodic orbits and limit sets). **COREQUISITE:** MATH 2120 or MATH 3242.

### **MATH 6084 - Introduction to Graph Theory**

**Credit Hours:** (3) **Description** Applications, connectivity, trees, paths and cycles, factors, matching and coverings, vertex and edge colorings, planar graphs, directed graphs, max-flow min-cut theorem, basic algorithms.

**PREREQUISITE(S):** MATH 2702 or COMP 2700 with a minimum grade of C-

### **MATH 6085 - Introduction to Combinatorics**

**Credit Hours:** (3) **Description** Combinations and permutations, counting techniques, recurrence relations, generating functions. block designs, finite planes, and coding theory. **PREREQUISITE(S):** MATH 2702 or COMP 2700 with a minimum grade of C-.



### **MATH 6086 - Analytic Number Theory**

**Credit Hours:** (3) **Description** Partial summation, Euler-Maclaurin summation formula, basic arithmetic functions and their mean values; Dirichlet series, Euler products; Meilin function and prime number theorem; characters and primes in arithmetic progressions, basic sieve methods.

### **MATH 6120 - Ordinary Differtl Equations**

**Credit Hours:** (3) **Description** MATH 4120/6120 - Ordinary Differential Equations (3) Existence and uniqueness of solutions, phase plane analysis, continuous dependence on data, stability by Lyapunov's methods, matrix exponentials, periodic solutions, invariance principle, Poincare-Bendixson theorem, applications. **PREREQUISITE(S):** A grade of C- or better in both MATH 2120 and MATH 3242; or permission of instructor.

### **MATH 6151 - History Of Math**

**Credit Hours:** (3) **Description** The development of mathematics from the earliest times to the present; problem studies; parallel reading and class reports.

**PREREQUISITE(S):** 21 hours in MATH courses including MATH 2110 with a minimum grade of C- and one of MATH 2702 with a minimum grade of C- or COMP 2700 with a minimum grade of C-.

### **MATH 6171 - Spec Prob In Math**

**Credit Hours:** (1-3) **Description** Directed individual study in a selected area of mathematics chosen in consultation with the instructor. Repeatable for a maximum of 3 credit hours by permission of the Chair of the Department.

### **MATH 6242 - Linear Algebra**

**Credit Hours:** (3) **Description** Linear transformations polynomials, determinants, direct-sum decompositions diagonalizable operators, rational and Jordan form, inner product spaces, the spectral theorem.

### **MATH 6261 - Abstract Algebra**

**Credit Hours:** (3) **Description** Groups, homomorphisms, rings, integral domains, fields, polynomials. **PREREQUISITE(S):** MATH 2702 with a minimum grade of C- and MATH 3242 with a minimum grade of C-, or permission of instructor.

### **MATH 6350 - Intro Real Analysis I**

**Credit Hours:** (3) **Description** The real number system, functions and sequences, limits, continuity, differentiation; Riemann-Stieltjes integration, series of functions.

### **MATH 6351 - Intro Real Analysis II**

**Credit Hours:** (3) **Description** Integration theory; Riemann and Lebesgue integrals; partial differentiation; implicit function theorem.

### **MATH 6361 - Complex Variables**

**Credit Hours:** (3) **Description** Complex numbers, analytic functions, Cauchy-Riemann conditions, Taylor and Laurent series, integration.

### **MATH 6391 - Partial Diffrentl Equation I**

**Credit Hours:** (3) **Description** Laplace transforms; Fourier series; introduction to partial differential equations.

### **MATH 6392 - Partial Diffrentl Equation II**

**Credit Hours:** (3) **Description** Methods of characteristics; Greens functions; existence and regularity of solutions of boundary value and Cauchy problems.

### **MATH 6396 - Perturbation Methods**

**Credit Hours:** (3) **Description** Asymptotic approximations, boundary layers, matched asymptotic expansions, multiple scales, geometric optics approximation (WKB), homogenization, application to differential equations.

**PREREQUISITE(S):** A grade of C- or better in both MATH 2120 and MATH 3242; or permission of instructor.

### **MATH 6411 - Topology**

**Credit Hours:** (3) **Description** Introductory set theory, metric spaces, topological spaces, continuous functions, separation axioms, separability and countability axioms, connectedness, and compactness. **PREREQUISITE(S):** Permission of instructor.

### **MATH 6607 - Intro SAS Programming**

**Credit Hours:** (3) **Description** SAS program statement syntax and flow control; selecting and summarizing

observations; combining, dividing and updating SAS data set; input tailoring and output customization; SAS built-in functions, SAS/IML matrix programming language and SAS statistical packages such as SAS/UNIVARIATE, FREQ, TABULATE, SAS/CHART, PLOT and SAS/REG, GLM, CORR, NPARIWAY. **PREREQUISITE(S):** Introductory course in statistics.

### **MATH 6608 - R for Data Proc and Visual**

**Credit Hours:** (3) **Description** One semester introductory course in the use of R programming language for data processing, visualization, and analysis of data.

### **MATH 6611 - Intro Applied Statistics**

**Credit Hours:** (3) Former: (6671) **Description** Binomial, hypergeometric, Poisson, multinomial and normal distributions; test of hypotheses, chi-square test, t-tests, F- test, nonparametric tests; correlation analysis. Credit earned for this course may not be applied toward requirements for the Mathematical Sciences major. Students who have a calculus background are encouraged to take MATH 6635 or 6614 instead of this course. **PREREQUISITE(S):** 6 hours in mathematics at level of MATH 1710 or above.

### **MATH 6614 - Probability/Statistics**

**Credit Hours:** (3) **Description** Basic definition of probability functions; common discrete and continuous distributions; max. like-lihood and methods of moments estimation; basic concepts of hypothesis testing; comparisons of two population means, proportion, and variances; simple linear models. Students may not receive credit for both MATH 6614 and MATH 6635 **PREREQUISITE(S):** MATH 2110, or MATH 1920 and one of MATH 2702 or COMP 2700 or permission of instructor.

### **MATH 6635 - Intro Probability Theory**

**Credit Hours:** (3) **Description** Definition and properties of probability functions; random variables, moment generating functions; mean, variance and higher moments; discrete distributions: binomial, hypergeometric, Poisson, geometric, negative binomial; continuous distributions: uniform, exponential, gamma, normal Cauchy, chi-square, t, and F distributions; central limit theorem; functions of a random variable; bivariate, marginal, and conditional distributions and covariance.

### **MATH 6636 - Intro Statistical Theory**

**Credit Hours:** (3) **Description** Functions of two random variables; gamma, beta, multinomial, and bivariate normal distributions; Bayes estimators; maximum likelihood and method of moments estimators; sufficient statistics, unbiasedness, confidence intervals, and hypothesis testing.

### **MATH 6637 - Stat Analysis/App Big Data**

**Credit Hours:** (3) **Description** Introduction to statistical modeling and analysis with some applications to big data. Topics include: linear models - regression, analysis of variance, multiple comparisons, shrinkage methods, and model checking; dimension reduction methods; discriminant analysis and clustering; and Bayesian modeling and computation. Some knowledge of programming is useful but not required. **COREQUISITE(S):** MATH 6614 or MATH 6636.

### **MATH 6640 - Intro Probability Models**

**Credit Hours:** (3) **Description** Introduction to Markov chains; Limiting Probabilities, Branching processes, applications to modeling population growth and spread of infectious diseases; Counting and Poisson processes; Continuous-time Markov Chains, Birth and Death Processes, applications to queuing models. **PREREQUISITE(S):** MATH 6635

### **MATH 6643 - Intro Regression/Time Ser Anal**

**Credit Hours:** (3) **Description** Hypothesis testing and confidence intervals for linear regression models, examination of residuals, calculation of elasticities and partial correlations, heteroscedasticity, serial correlation, multicollinearity, non-linearity, deterministic and stochastic time series models, stationary time series and autocorrelation functions, diagnostic checks, forecasting using ARIMA models.

### **MATH 6685 - Statistical Learning I**

**Credit Hours:** (3) **Description** Introduction to statistical foundations of computational tools for modeling and understanding big data. Emphasis is on application to real data sets. Topics include linear regression, shrinkage methods, classification algorithms, principle component analysis, support vector algorithms, clustering methods, and ethical aspects of statistical learning. **PREREQUISITE(S):** MATH 4/6614 with a minimum grade of C-, or MATH 4/6635 with a minimum grade of C-, or with permission of instructor.

## MATH 6686 - Statistical Learning II

**Credit Hours:** (3) **Description** Statistical foundations of computer-based tools used in the modeling and analysis of big data. Emphasis is on application of Bayesian methods to real data sets. Topics include cross-validation, Bayesian inference and computation, non-parametric methods and ethical aspects of statistical learning. **PREREQUISITE(S):** MATH 6685 with a minimum grade of C-, or permission of the instructor.

## MATH 6721 - Numerical Analysis

**Credit Hours:** (3) **Description** Derivation and application of computer-oriented, numerical methods for functional approximation, differentiation, quadrature, and solution of ordinary differential equations. **PREREQUISITE(S):** A grade of C- or better in both MATH 2120 and MATH 3242; knowledge of some structured programming language.

## MATH 7016 - Fourier Analysis

**Credit Hours:** (3) **Description** Facilitates understanding of some important facts about Fourier series, Fourier transforms, and finite Fourier analysis, including applications to other sciences (optics, acoustics, particle physics, uncertainty principle) as well as links within mathematics (infinitude of primes, isoperimetric inequality). May be repeated for a maximum of 6 credit hours when topics change.

## MATH 7020-7049 - Special Topics in Mathematics

**Credit Hours:** (3)

## MATH 7171 - Wksp Middle Sch Math

**Credit Hours:** (3) **Description** This course is designed to provide in-service training, with emphasis on new course content.

## MATH 7174 - Workshop Sr Hi Math

**Credit Hours:** (3) **Description** This course is designed to provide in-service training, with emphasis on transformation geometry.

## MATH 7221 - Stat Gene Expression

**Credit Hours:** (3) **Description** Design of microarray experiments; normalization procedures for Oligonucleotide

and cDNA microarrays; clustering procedures: hierarchical clustering, principal components and analysis, discriminant analysis, eigenvalue decomposition discriminant analysis and nonparametric clustering methods; controlling error rates in multiple testing through resampling methods, false discovery rates, Bayesian and empirical Bayes techniques, Support Vector Machines.

## MATH 7235 - Combinatorics

**Credit Hours:** (3) **Description** (MATH 7793). Principles and techniques of combinatorial mathematics with a view toward applications in computer science; methods of enumeration, matching theory, paths and cycles, planarity, coloring problems, extremal problems.

## MATH 7236 - Probabilistic Combinatorics

**Credit Hours:** (3) **Description** A study of recent results in probabilistic models and combinatorial methods and their applications. Example topics include: isoperimetric and correlation inequalities, influences of random variables, Martingales, projection inequalities, zero-one and approximate zero-one laws. May be repeated for a maximum of 6 credit hours when topics change.

## MATH 7237 - Graph Theory

**Credit Hours:** (3) **Description** Connectivity, Euler tours, and Hamilton cycles, matchings, coloring problems, planarity, and network flows; study of classical theorems due to Brooks, Menger, Kuratowski, Schur, Tutte, and Vizing.

## MATH 7261 - Algebraic Theory I

**Credit Hours:** (3) **Description** Studies in group theory and ring theory, including Sylow theory and factorization theory.

## MATH 7262 - Algebraic Theory II

**Credit Hours:** (3) **Description** A continuation of Math 7261. Studies in field theory and modules, including free algebras, Galois theory, tensor products.

## MATH 7281 - Foundations of Linear Algebra

**Credit Hours:** (3) Former: (MATH 7793) **Description** Euclidean n-space; vector spaces; subspaces; linear independence and bases; linear transformations; matrices;

systems of linear conditions; characteristic values and vectors of linear transformations. Applications of linear algebra including least squares regression. Emphasis on proving major theorems. **PREREQUISITE(S):** Department Permit required.

### **MATH 7282 - Foundations of Algebra**

**Credit Hours:** (3) **Description** Study of algebraic structures relevant to postsecondary mathematics: integral domains, fields and their applications to the algebra of integers and polynomials. Emphasizing proofs of important theorems, including the Fundamental Theorem of Algebra.

**PREREQUISITE(S):** Departmental Permit required.

### **MATH 7291 - Number Theory for Tchrs**

**Credit Hours:** (3) **Description** Divisibility properties of the integers and modular arithmetic. Greatest common divisors, Euclidean algorithm, and linear Diophantine equations. Tests for Divisibility. Systems of linear congruences and Chinese remainder theorem. Prime numbers, distribution of prime numbers, and Mersenne primes. Fermat's little theorem, Euler's Theorem and Wilson's Theorem. Applications to RSA encryption. This course will not be counted as credit for a graduate program in Mathematics except the Masters of Science in Mathematics with concentration in the Teaching of Mathematics.

### **MATH 7296 - Geometry for Tchrs**

**Credit Hours:** (3) **Description** Axiomatic development of Euclidean geometry. Comparisons of hyperbolic, spherical, and projective geometries. Focus is on constructing geometric proofs. This course will not be counted as credit for a graduate program in Mathematics except the Masters of Science in Mathematics with a concentration in the Teaching of Mathematics.

### **MATH 7311 - Topics In Analysis**

**Credit Hours:** (1-3) **Description** Repeatable by permission.

### **MATH 7321 - Modeling & Computation**

**Credit Hours:** (3) **Description** Introduction to process of formulating, solving, and interpreting mathematical models of real phenomena; both formal analysis and numerical techniques for variety of models. **PREREQUISITE(S):** A grade of C- or better in MATH 6391; or permission of instructor.

### **MATH 7350 - Real Variables I**

**Credit Hours:** (3) **Description** s-algebra, outer measure, Lebesgue measure, measurable functions, differentiation, absolute continuity,  $L_p$ -spaces.

### **MATH 7351 - Real Variables II**

**Credit Hours:** (3) **Description** Metric spaces, Baire category theorem, Hahn Banach theorem, uniform boundedness principle, closed graph theorem, general measure, signed measures, Radon-Nikodym theorem, product measures, Fubini theorem. Grades of S, U, or IP will be given.

### **MATH 7352 - Ergodic Theory**

**Credit Hours:** (3) **Description** Examples of measure preserving transformations, Von Neumann and Birkhoff ergodic theorem, isomorphism, factors, ergodic decomposition, weak mixing, strong mixing, invariant measures for continuous transformations, unique ergodicity, applications to combinatorics and number theory (uniform distribution, continued fractions, Furstenberg correspondence principle, Roth and Sarkozy's theorem), entropy, asymptotic equipartition property.

### **MATH 7355 - Functional Analysis I**

**Credit Hours:** (3) **Description** Vector spaces, Banach spaces, Hilbert spaces; linear functionals and operators in such spaces; spectral theory. **PREREQUISITE(S):** Permission of instructor.

### **MATH 7356 - Functional Analysis**

**Credit Hours:** (3) **Description** A continuation of MATH 7355-8355. **PREREQUISITE(S):** MATH 7355. Standard Lecture

### **MATH 7361 - Complex Analysis**

**Credit Hours:** (3) **Description** A selection of advanced topics in complex analysis, including analytic functions, power series, mapping properties, complex integration, Cauchy's theorem and its consequences, sequences of analytic functions. May be repeated for a maximum of 6 credit hours when topics change.

### **MATH 7371 - Calculus Of Variations**

**Credit Hours:** (3) **Description** Introduction to calculus of variations, Euler-Lagrange equations, and optimization in infinite dimensional spaces. Applications could include various topics in science, engineering, economics, or geometry, such as ground state density theories, Dirichlet's principle and differential equations, theory of least action, depending on interests of class. **PREREQUISITE(S):** Permission of Instructor.

### **MATH 7375 - Methods Math Physics I**

**Credit Hours:** (3) **Description** (Same as ESCI 7375, PHYS 7375). Vector spaces, matrices, tensors, vector fields, function spaces, differential and integral operators, transform theory, partial differential equations.

### **MATH 7376 - Mthds Math Physics II**

**Credit Hours:** (3) **Description** (Same as ESCI 7376, PHYS 7376). Complex variables, asymptotic expansions, special functions, calculus of variations, additional topics on matrices and operators, topics in non-linear analysis.  
**PREREQUISITE(S):** Permission of Instructor.

### **MATH 7381 - Real Analy For Tchrs I**

**Credit Hours:** (3) **Description** Properties of real number system, elementary functions, plane analytic geometry, nature of the derivative, techniques of differentiation, periodic functions, differentiation of trigonometric functions, applications of the derivative, concepts of integration.

### **MATH 7382 - Real Analy For Tchrs II**

**Credit Hours:** (3) **Description** Continuation of MATH 7381; definite integral with applications, integration of elementary transcendental functions, techniques of integration, indeterminate forms and improper integrals, infinite sequences and infinite series with tests for convergence.  
**PREREQUISITE(S):** Permission of Instructor.

### **MATH 7383 - Concepts of Calculus 1**

**Credit Hours:** (4) **Description** Study of the conceptual underpinnings of differential calculus of one real variable. Topics of study include sequences, limits of sequences, limit laws for sequences, limits of functions, limit laws for functions, relationship between limits of sequences and limits of functions, definitions of continuity, definition of differentiation via limits, definition of differentiation via linear approximation, sequential compactness, differentiation rules

via limits, differentiation laws via linear approximation, relationship between notions of continuity and differentiability, high order differentiation, the Extreme Value Theorem, applications of differentiation, antiderivatives. Formal proofs of important theorems are discussed with special emphasis on how to adapt the material to the intended audience. **PREREQUISITE(S):** Departmental Permit required.

### **MATH 7384 - Concepts of Calculus 2**

**Credit Hours:** (4) **Description**  
Study of the conceptual underpinnings of integral calculus of one real variable. Topics of study include series, Riemann and Riemann-Stieltjes Integration, the Fundamental Theorem of Calculus, applications of integration, and techniques of integration, including substitution, integration by parts, and partial fraction decomposition. Formal proofs of important theorems are discussed with special emphasis on how to adapt the material to the intended audience.  
**PREREQUISITE(S):** Departmental Permit required.

### **MATH 7385 - Concepts of Multivariable Calculus**

**Credit Hours:** (4) **Description**  
Study of the conceptual underpinnings of multivariable differential and integral calculus. Topics of study include three-dimensional analytic geometry and vectors, quadratic surfaces, arc length and curvature, limits and continuity, partial derivatives and their applications, tangent planes, optimization problems and Lagrange multipliers, multiple integrals, vector fields, line and surface integrals, Green's theorem, Stokes' theorem, the divergence theorem. Particular attention is paid to visualization and geometry. Formal proofs of important theorems are discussed with special emphasis on how to adapt the material to the intended audience.  
**PREREQUISITE(S):** Department Permit required.

### **MATH 7391 - Foundations of Differential Equations**

**Credit Hours:** (3) **Description** Study of the teaching of ordinary differential equations. Topics include first order differential equations; linear differential equations of all orders; series methods for linear equations; Laplace transform; systems of differential equations; applications; modeling approaches; and technology integration. This course will not be counted as credit for a graduate program in Mathematics except the Masters of Science in Mathematics with a concentration in the Teaching of Mathematics. **PREREQUISITE(S):** Permission of instructor.

### MATH 7393 - Differl Equatns/App

**Credit Hours:** (3) **Description** Basic concepts in ordinary and partial differential equations (possibly functional or stochastic differential equations); existence, uniqueness, continuous dependence theorems. Application areas could include diffusion, wave propagation, population dynamics, neural networks, mathematical biology and ecology, quantum theory, kinetic theory, depending on interests of class.

**PREREQUISITE(S):** A grade of C- or better in MATH 2120 or permission of instructor.

### MATH 7395 - Theory Diff Equatns

**Credit Hours:** (3) **Description** Qualitative aspects of linear and nonlinear differential equations including asymptotic behavior and regularity; geometric, functional analytic, and harmonic analytic methods. The asymptotic could include ergodic limits and chaos. The regularity might range from analyticity to discontinuous solutions (shocks, liquid crystals, etc.). **PREREQUISITE(S):** A grade of C- or better in both MATH 6242 and MATH 6350; or permission of instructor.

### MATH 7411 - Point Set Topology

**Credit Hours:** (3) Former: (6671) **Description** An axiomatic approach to compactness, separability, connectedness, metrizable and other topological properties.

**PREREQUISITE(S):** Permission of instructor.

### MATH 7501 - Nonlinear Wave Phenomena

**Credit Hours:** (3) **Description** KdV-equation, regularized long wave BBM-equation, explicit solitary and cnoidal waves, orbital stability of solitary and cnoidal waves, Boussinesq equation, Boussinesq systems of equations, pseudo differential equations as internal wave models, Krasnosell'skii's topological degree theory, P.L. Lions' concentration-compactness principle, existence and stability of traveling waves. **PREREQUISITE(S):** Permission of Instructor.

### MATH 7502 - Semigroups of Linear Operators

**Credit Hours:** (3) **Description** Generation of linear semigroups, perturbation and approximation, applications to partial differential equations, probability theory, quantum theory and Feynman integrals. Grades of S, U, or IP will be given.

### MATH 7503 - Semigroups Nonlinear Operators

**Credit Hours:** (3) **Description** Generation of nonlinear semigroups, mild solutions and limit solutions, approximation and perturbation theory, convex analysis, applications to partial differential equations, nonlinear parabolic problems, conservation laws, Hamilton-Jacobi equation, viscosity solutions, variational calculus and elliptic problems.

### MATH 7504 - Partial Differential Equations

**Credit Hours:** (3) **Description** A selection of the following topics: Explicit and semi-explicit formulas for some classical partial differential equations, Maximum Principle, Sobolev spaces, harmonic analysis methods, parabolic, hyperbolic and elliptic equations, introduction to nonlinear partial differential equations. May be repeated for a maximum of 6 credit hours when topics change. **PREREQUISITE(S):** Permission of Instructor.

### MATH 7521 - ADP Stoch Optim & Control

**Credit Hours:** (3) **Description** Basic concepts and mathematical foundations of neural networks, learning, nonlinear optimization and control. Exact and approximate optimization of the utility function. Bellman equation, approximate Bellman equation for solving multivariate optimization problems in real time. Partially observable variables, with random noise and tactical objectives varying in time. **COREQUISITE(S):** NURS 7902.

### MATH 7601 - Postsecondary Statistics

**Credit Hours:** (3) **Description** Study of random variables and distributions relevant for post-secondary statistics; basic concepts of hypothesis testing, inference for two population means, proportions, and variances; simple linear regression; inference for regression coefficients. Emphasis on formal theory underlying the content of an introductory statistics course. **PREREQUISITE(S):** Department Permit required.

### MATH 7607 - Adv Prog In Sas

**Credit Hours:** (3) **Description** Covers SAS macro language and SAS SOL; topics include macro variables, macro processing, Macro expressions, Macro quoting; Proc SQL, retrieving data from tables, creating and updating tables and views; applications in statistics.

## MATH 7608 - Statistical Programming with R

**Credit Hours:** (3) **Description** Covers R programming language for statistical computation; Topics include: Input/output, R objects, functions, graphics, numerical techniques, optimization, simulation, Monte Carlo techniques.

## MATH 7613 - Probability Theory

**Credit Hours:** (3) **Description** Probability measures; distribution functions; independence; mathematical expectation, modes of convergence; Borel-Cantelli Lemma, weak and strong laws of large numbers; Glivenko-Cantelli lemma; characteristic functions inversion theorems; Slutsky's theorem, central limit theorem, Liapounov and Lindberg-Levy and Lindberg-Feller theorems; multivariate extensions; Berry-Esseen theorem. **COREQUISITE(S):** NURS 7904.

## MATH 7635 - Adv Stat Learning I

**Credit Hours:** (3) **Description** This is the first course in a two-course sequence designed to introduce students to a set of tools used in the modeling and understanding of big data at a more advanced level. The two-part course introduces statistical methods in the context of developments in computer science. Emphasis is on application to real data sets. Topics include linear regression, shrinkage methods, linear discriminant analysis, logistic regression, nonparametric logistic regression, kernel methods, cross validation and bootstrap methods. **PREREQUISITE(S):** MATH 4635/6635 and MATH 4636/6636.

## MATH 7636 - Adv Stat Learning II

**Credit Hours:** (3) **Description** This is the second course in a two-course sequence designed to introduce students to a set of tools used in the modeling and understanding of big data at a more advanced level. The two-part course introduces statistical methods in the context of developments in computer science. Emphasis is on application to real data sets. Topics include Bayesian methods, EM algorithm, MCMC, additive models, tree based methods, boosting methods, neural networks, support vector machines, discriminant analysis, clustering, PCA, and random forests. **PREREQUISITE(S):** MATH 7635/MATH 8635.

## MATH 7641 - Analysis Of Variance

**Credit Hours:** (3) **Description** Basic concepts of ANOVA, partitioning of the sums of squares, fixed effects models, t-

and F-tests, multiple comparison procedures, random effect models, variance component models, analysis of covariance and introduction to MANOVA (SAS or comparable statistical packages used extensively to analyze different types of designs). **PREREQUISITE(S):** 18 credit hours in Ethnomusicology or Southern Regional Music.

## MATH 7642 - Experimental Design

**Credit Hours:** (3) **Description** Fundamental concepts in designing experiments, justification of linear models, randomization, principle of blocking, use of concomitant observations, principle of confounding, fractional replication, composite designs, incomplete block designs. **COREQUISITE(S):** NURS 7990 or permission of instructor.

## MATH 7643 - Least Sq/Regr Analysis

**Credit Hours:** (3) **Description** Basic concepts of hypothesis testing and confidence intervals; simple and multiple regression analyses, model selection, Mallow's  $C_p$ , examination of residuals, Box-Cox transformation, influence diagnostics, multicollinearity, ridge-regression, probit, logit, and log-linear analyses; intensive use of SAS or other statistical packages. **PREREQUISITE(S):** Completion of 18 graduate level credit hours in music, including MUHL 7400 and MUHL 6801.

## MATH 7645 - Sampling Techniques

**Credit Hours:** (3) **Description** Planning, execution, and analysis of sampling from finite populations; simple, stratified, multistage cluster and systematic sampling; ratio and regression estimates, estimation of variance.

## MATH 7647 - Non-Param Stat Meth

**Credit Hours:** (3) **Description** Use of distribution-free statistics for estimation, hypothesis testing, and correlation measures in designing and analyzing experiments.

## MATH 7651 - Linear Models

**Credit Hours:** (3) **Description** Multivariate normal distributions, distribution of quadratic forms, general linear hypothesis of full rank, optimal point and interval estimations, applications to regression models; elements of generalized linear models, applications to logistic regression and log-linear models; use of SAS procedures. **PREREQUISITE(S):** MUID 2201 and permission of instructor.

### **MATH 7654 - Inference Theory**

**Credit Hours:** (3) **Description** Bayes and maximum likelihood estimators, sufficient statistics; Rao-Blackwell Theorem, sampling distributions; unbiasedness, completeness and UMVU estimators; efficient estimators, Cramer-Rao inequality; simple robust estimators; UMP-tests; likelihood ratio tests, t-tests and F-tests.

### **MATH 7656 - Adv Tchn Statistcl Infr**

**Credit Hours:** (3) **Description** Limit theorems; uniformly minimum variance unbiased and maximum likelihood estimators; information inequalities; large sample theory; robust estimators; uniformly most powerful unbiased and invariant tests; sequential and robust tests.

### **MATH 7657 - Multivar Stat Meth**

**Credit Hours:** (3) **Description** Basic contents: multivariate normal distributions; Wishart distribution, Hotelling-T<sub>2</sub>, Matric-t and Beta distributions; generalized regression models and growth curve models; multivariate analysis of variance; principal component analysis; discriminant analysis; factor analysis; curve fitting procedures in multivariate cases. All topics will be illustrated by practical examples.

### **MATH 7660 - App Time Series Analy**

**Credit Hours:** (3) **Description** Basic concepts and examples of stationary and nonstationary time series; random harmonic analysis; spectral density functions, model building procedures for time series models; model identification; diagnostic checking, smooth, forecasting and control; Box-Jenkin approach of time series analysis; some seasonal models. May be repeated when topic changes.

### **MATH 7670 - App Stochastic Models**

**Credit Hours:** (3) **Description** Markov chains with discrete time; classification of states, stationary distributions, absorption probabilities and absorption time; Markov chains with continuous time; birth-death processes, waiting time distributions, queuing models, population growth models, Kolmogorov forward and backward equations, diffusion processes, Fokker-Planck equation; applications to genetic problems, etc. May be repeated when topic changes.

### **MATH 7671 - Indiv Study Statistics**

**Credit Hours:** (1-3) **Description** Directed individual study of recent developments in statistics. Repeatable by permission.

### **MATH 7672 - Spec Prob Statistics**

**Credit Hours:** (1-3) **Description** (6671). Recent developments in statistical methods and applications.

### **MATH 7680 - Bayesian Inference**

**Credit Hours:** (3) **Description** Nature of Bayesian inference; formulation and choice of prior distributions; advantages and disadvantages of Bayesian approach; applications of Bayesian approach to Behren-Fisher problems, to regression analysis, and to the analysis of random effect models; applications of Bayesian approach to the assessment of statistical assumptions; Bayesian prediction procedures.

### **MATH 7681 - Probability For Tchrs**

**Credit Hours:** (3) **Description** Probability spaces, theory of statistical inference, physical interpretations of probability. **PREREQUISITE** MATH 1920.

### **MATH 7685 - Simulation & Computing**

**Credit Hours:** (3) **Description** Uniform random number generation and testing, generation methods for non-uniform random variables, simulating random numbers from specific distributions, Metropolis-Hastings algorithm, Markov Chain Monte-Carlo (MCMC), Gibbs sampling. **PREREQUISITE(S):** Two semesters (or equivalent) of undergraduate improvisation, and permission of instructor.

### **MATH 7691 - Sem Statistical Resch**

**Credit Hours:** (1-3) **Description** Recent developments in statistical methods and their applications. Basic topics cover multivariate method

### **MATH 7692 - Statistical Consulting**

**Credit Hours:** (3) **Description** Methods and techniques of statistical consulting; students will participate in consulting practice supervised by graduate faculty in statistics. May be repeated for a total of 6 credit hours. **PREREQUISITE(S):** Permission of instructor.

### **MATH 7695 - Bootstrap/Other Methods**



**Credit Hours:** (3) **Description** Empirical distribution and plug-in principle; bias reduction; bootstrapping regression models; the jackknife; balanced repeated replication; bootstrap confidence intervals; parametric bootstrap; permutation tests.

### **MATH 7721 - Adv Numerical Analysis**

**Credit Hours:** (3) **Description** A continuation of Mathematics 6721; specialized methods and techniques in field of numerical analysis. **PREREQUISITE(S):** A grade of C- or better in MATH 6721.

### **MATH 7759 - Categorical Analysis**

**Credit Hours:** (3) **Description** Exponential family of distributions and generalized linear models; binary variables and logistic regression; contingency tables and log-linear models; quasi-likelihood functions; estimating functions.

### **MATH 7762 - Survival Analysis**

**Credit Hours:** (3) **Description** Nonparametric estimation and comparison of survival functions: Kaplan-Meier Estimator and other estimators of hazard functions; parametric survival models; Gehan test, Mantel-Haenszel test and their extensions; Cox proportional hazard model: conditional likelihood, partial likelihood analysis, identification of prognostic and risk factors; applications to life-testing and analysis of survival data using statistical packages such as SAS. Grades of A-F, or IP will be given.

### **MATH 7764 - Stat Methods Biom/Envir**

**Credit Hours:** (3) **Description** Penalized likelihood method, spline and nonparametric regression, use of E-M algorithm, Fourier transform method, error-in-variables, longitudinal models and repeated measures; generalized estimating equations; analysis and modeling of AIDS data; statistical risks assessment. Grades of S, U, or IP will be given.

### **MATH 7765 - Adv Stochastic Mod Biom**

**Credit Hours:** (3) **Description** Stochastic models of the AIDS epidemic; chain multinomial models, Markov models, Non-Markov marker processes, diffusion processes for AIDS, stochastic models of carcinogenesis; two-stage, multi-event and multiple path models.

### **MATH 7821 - Special Prob In Math**

**Credit Hours:** (1-3) **Description** Directed individual study in a selected area of mathematics chosen in consultation with the instructor and the student's advisor. Repeatable by permission.

### **MATH 7921 - Spec Prob Diff Equation**

**Credit Hours:** (1-3) **Description** Repeatable by permission.

### **MATH 7922 - Spec Prob Applied Math**

**Credit Hours:** (1-3) **Description** Repeatable by permission. Grades of A-F, or IP will be given.

### **MATH 7960 - GA Teaching & Academic Strateg**

**Credit Hours:** (3) **Description** Non-traditional setting in which graduate students develop skills in areas of teaching, research, and university resources. Required of all first year graduate assistants in the department. Grades of A-F or IP will be given. This course may not be repeated for credit.

### **MATH 7995 - Project Applied Math**

**Credit Hours:** (1-3) Former: (7308) **Description** Mathematical modeling problem related to science or industry, selected in consultation with a faculty advisor, and leading to final report. Repeatable by permission.

### **MATH 7996 - Thesis**

**Credit Hours:** (1-6) **Description** Grades of S, U, or IP will be given.

### **MATH 8020-8049 - Special Topics in Mathematics**

**Credit Hours:** (3)

### **MATH 8221 - Stat Gene Expression**

**Credit Hours:** (3) **Description** Design of microarray experiments; normalization procedures for Oligonucleotide and cDNA microarrays; clustering procedures: hierarchical clustering, principal components and analysis, discriminant analysis, eigenvalue decomposition discriminant analysis and nonparametric clustering methods; controlling error rates in multiple testing through resampling methods, false discovery rates, Bayesian and empirical Bayes techniques, Support Vector Machines.

### MATH 8235 - Combinatorics

**Credit Hours:** (3) **Description** Principles and techniques of combinatorial mathematics with a view toward applications in computer science; methods of enumeration, matching theory, paths and cycles, planarity, coloring problems, extremal problems.

### MATH 8236 - Probabilistic Combinatorics

**Credit Hours:** (3) **Description** A study of recent results in probabilistic models and combinatorial methods and their applications. Example topics include: isoperimetric and correlation inequalities, influences of random variables, Martingales, projection inequalities, zero-one and approximate zero-one laws. May be repeated for a maximum of 6 credit hours when topics change.

### MATH 8237 - Graph Theory

**Credit Hours:** (3) **Description** Connectivity, Euler tours, and Hamilton cycles, matchings, coloring problems, planarity, and network flows; study of classical theorems due to Brooks, Menger, Kuratowski, Schur, Tutte, and Vizing.

### MATH 8311 - Topics In Analysis

**Credit Hours:** (1-3) **Description** Repeatable by permission.

### MATH 8355 - Functional Analysis I

**Credit Hours:** (3) **Description** Vector spaces, Banach spaces, Hilbert spaces; linear functionals and operators in such spaces; spectral theory.

### MATH 8356 - Functional Analysis

**Credit Hours:** (3) **Description** A continuation of MATH 7355-8355. May be repeated for a maximum of 3 credits when area of study varies **PREREQUISITE(S):** MATH 8355 Standard Letter

### MATH 8393 - Differl Equatns/App

**Credit Hours:** (3) **Description** Basic concepts in ordinary and partial differential equations (possibly functional or stochastic differential equations); existence, uniqueness, continuous dependence theorems. Application areas could include diffusion, wave propagation, population dynamics, neural networks, mathematical biology and ecology, quantum

theory, kinetic theory, depending on interests of class.

**PREREQUISITE(S):** A grade of C- or better in MATH 2120 or permission of instructor.

### MATH 8395 - Theory Diff Equatns

**Credit Hours:** (3) **Description** Qualitative aspects of linear and nonlinear differential equations including asymptotic behavior and regularity; geometric, functional analytic, and harmonic analytic methods. The asymptotic could include ergodic limits and chaos. The regularity might range from analyticity to discontinuous solutions (shocks, liquid crystals, etc.). **PREREQUISITE(S):** A grade of C- or better in both MATH 6242 and MATH 6350; or permission of instructor.

### MATH 8501 - Nonlinear Wave Phenomena

**Credit Hours:** (3) **Description** KdV-equation, regularized long wave BBM-equation, explicit solitary and cnoidal waves, orbital stability of solitary and cnoidal waves, Boussinesq equation, Boussinesq systems of equations, pseudo differential equations as internal wave models, Krasnosell'skii's topological degree theory, P.L. Lions' concentration-compactness principle, existence and stability of traveling waves.

### MATH 8502 - Semigroups of Linear Operators

**Credit Hours:** (3) **Description** Generation of linear semigroups, perturbation and approximation, applications to partial differential equations, probability theory, quantum theory and Feynman integrals.

### MATH 8503 - Semigroups Nonlinear Operators

**Credit Hours:** (3) **Description** Generation of nonlinear semigroups, mild solutions and limit solutions, approximation and perturbation theory, convex analysis, applications to partial differential equations, nonlinear parabolic problems, conservation laws, Hamilton-Jacobi equation, viscosity solutions, variational calculus and elliptic problems.

### MATH 8504 - Partial Differential Equations

**Credit Hours:** (3) **Description** A selection of the following topics: Explicit and semi-explicit formulas for some classical partial differential equations, Maximum Principle, Sobolev spaces, harmonic analysis methods, parabolic, hyperbolic and elliptic equations, introduction to nonlinear partial differential

equations. May be repeated for a maximum of 6 credit hours when topics change.

### **MATH 8521 - ADP Stoch Optim & Control**

**Credit Hours:** (3) **Description** Basic concepts and mathematical foundations of neural networks, learning, nonlinear optimization and control. Exact and approximate optimization of the utility function. Bellman equation, approximate Bellman equation for solving multivariate optimization problems in real time. Partially observable variables, with random noise and tactical objectives varying in time. **PREREQUISITE(S):** MKTG 3010.

### **MATH 8630-8639 - Special Topics in Statistics**

**Credit Hours:** (1-3)

### **MATH 8635 - Adv Stat Learning I**

**Credit Hours:** (3) **Description** This is the first course in a two-course sequence designed to introduce students to a set of tools used in the modeling and understanding of big data at a more advanced level. The two-part course introduces statistical methods in the context of developments in computer science. Emphasis is on application to real data sets. Topics include linear regression, shrinkage methods, linear discriminant analysis, logistic regression, nonparametric logistic regression, kernel methods, cross validation and bootstrap methods. **PREREQUISITE(S):** MATH 4635/6635 and MATH 4636/6636.

### **MATH 8636 - Adv Stat Learning II**

**Credit Hours:** (3) **Description** This is the second course in a two-course sequence designed to introduce students to a set of tools used in the modeling and understanding of big data at a more advanced level. The two-part course introduces statistical methods in the context of developments in computer science. Emphasis is on application to real data sets. Topics include Bayesian methods, EM algorithm, MCMC, additive models, tree based methods, boosting methods, neural networks, support vector machines, discriminant analysis, clustering, PCA, and random forests. **PREREQUISITE(S):** MATH 7635/MATH 8635.

### **MATH 8642 - Experimental Design**

**Credit Hours:** (3) **Description** Fundamental concepts in designing experiments, justification of linear models,

randomization, principle of blocking, use of concomitant observations, principle of confounding, fractional replication, composite designs, incomplete block designs.

**PREREQUISITE(S):** HPRM 2330, MGMT 3110.

### **MATH 8656 - Adv Tchn Statistcl Infr**

**Credit Hours:** (3) **Description** Limit theorems; uniformly minimum variance unbiased and maximum likelihood estimators; information inequalities; large sample theory; robust estimators; uniformly most powerful unbiased and invariant tests; sequential and robust tests.

### **MATH 8657 - Multivar Stat Meth**

**Credit Hours:** (3) **Description** Basic contents: multivariate normal distributions; Wishart distribution, Hotelling-T<sub>2</sub>, Matric-t and Beta distributions; generalized regression models and growth curve models; multivariate analysis of variance; principal component analysis; discriminant analysis; factor analysis; curve fitting procedures in multivariate cases. All topics will be illustrated by practical examples.

### **MATH 8660 - App Time Series Analy**

**Credit Hours:** (3) **Description** Basic concepts and examples of stationary and nonstationary time series; random harmonic analysis; spectral density functions, model building procedures for time series models; model identification; diagnostic checking, smooth, forecasting and control; Box-Jenkin approach of time series analysis; some seasonal models.

### **MATH 8670 - App Stochastic Models**

**Credit Hours:** (3) **Description** Markov chains with discrete time; classification of states, stationary distributions, absorption probabilities and absorption time; Markov chains with continuous time; birth-death processes, waiting time distributions, queuing models, population growth models, Kolmogorov forward and backward equations, diffusion processes, Fokker-Planck equation; applications to genetic problems, etc.

### **MATH 8671 - Indiv Study Statistics**

**Credit Hours:** (1-3) **Description** Directed individual study of recent developments in statistics. Repeatable by permission. May be repeated for a maximum of 3 credits when the topic varies

### **MATH 8672 - Spec Prob Statistics**

**Credit Hours:** (1-3) **Description** (6671). Recent developments in statistical methods and applications. Grades of A-F, or IP will be given.

### **MATH 8680 - Bayesian Inference**

**Credit Hours:** (3) **Description** Nature of Bayesian inference; formulation and choice of prior distributions; advantages and disadvantages of Bayesian approach; applications of Bayesian approach to Behren-Fisher problems, to regression analysis, and to the analysis of random effect models; applications of Bayesian approach to the assessment of statistical assumptions; Bayesian prediction procedures.

### **MATH 8685 - Simulation And Computing**

**Credit Hours:** (3) **Description** Uniform random number generation and testing, generation methods for non-uniform random variables, simulating random numbers from specific distributions, Metropolis-Hastings algorithm, Markov Chain Monet-Carlo (MCMC), Gibbs sampling.

### **MATH 8691 - Sem Statistical Rsrch**

**Credit Hours:** (1-3) **Description** Recent developments in statistical methods and their applications. Basic topics cover multivariate method

### **MATH 8692 - Statistical Consulting**

**Credit Hours:** (3) *Cross listing* (Same as CIVL 7124-CIVL 8124 ) **Description** Methods and techniques of statistical consulting; students will participate in consulting practice supervised by graduate faculty in statistics. May be repeated for a total of 6 credit hours.

### **MATH 8695 - Bootstrap/Other Methods**

**Credit Hours:** (3) **Description** Empirical distribution and plug-in principle; bias reduction; bootstrapping regression models; the jackknife; balanced repeated replication; bootstrap confidence intervals; parametric bootstrap; permutation tests.

### **MATH 8759 - Categorical Analysis**

**Credit Hours:** (3) **Description** Exponential family of distributions and generalized linear models; binary variables and logistic regression; contingency tables and log-linear models; quasi-likelihood functions; estimating functions.  
**PREREQUISITE(S):** Permission of instructor.

### **MATH 8762 - Survival Analysis**

**Credit Hours:** (3) **Description** Nonparametric estimation and comparison of survival functions: Kaplan-Meier Estimator and other estimators of hazard functions; parametric survival models; Gehan test, Mantel-Haenszel test and their extensions; Cox proportional hazard model: conditional likelihood, partial likelihood analysis, identification of prognostic and risk factors; applications to life-testing and analysis of survival data using statistical packages such as SAS.

**PREREQUISITE(S):** SLC 6001 .

### **MATH 8764 - Stat Methods Biom/Envir**

**Credit Hours:** (3) **Description** Penalized likelihood method, spline and nonparametric regression, use of E-M algorithm, Fourier transform method, error-in-variables, longitudinal models and repeated measures; generalized estimating equations; analysis and modeling of AIDS data; statistical risks assessment.

### **MATH 8765 - Adv Stochastic Mod Biom**

**Credit Hours:** (3) **Description** Stochastic models of the AIDS epidemic; chain multinomial models, Markov models, Non-Markov marker processes, diffusion processes for AIDS, stochastic models of carcinogenesis; two-stage, multi-event and multiple path models. **PREREQUISITE(S):** permission of instructor

### **MATH 8811 - Advan Sem In Math**

**Credit Hours:** (1-3) **Description** Independent research investigation of engineering problem under supervision of instructor for students in non-thesis option; both written and oral reports required

### **MATH 8812 - Ind Stdy Math/Stat**

**Credit Hours:** (1-12) **Description** Directed independent studies in an area selected by the student and approved by the student's advisory committee. Proposed plan of study must be approved prior to enrollment. Repeatable by permission. A maximum of 12 credit hours will count toward graduation.

### **MATH 8813 - Dir Rsrch Math/Stat**

**Credit Hours:** (1-12) **Description** Directed research in an area selected by the student and approved by the student's advisory committee. Proposed plan of study must be approved prior to enrollment. Repeatable by permission. A maximum of

12 credit hours will count toward graduation.

**PREREQUISITE(S):** Permission of instructor.

### **MATH 8821 - Spec Prob In Math**

**Credit Hours:** (1-3) *Cross listing* (Same as BIOM 7103- BIOM 8103) **Description** Directed individual study in a selected area of mathematics chosen in consultation with the instructor and the student's advisor. Repeatable by permission. **PREREQUISITE(S):** SLC 6001 .

### **MATH 8921 - Spec Prob Diff Equation**

**Credit Hours:** (1-3) **Description** Repeatable by permission.

### **MATH 8922 - Spec Prob Applied Math**

**Credit Hours:** (1-3) **Description** Repeatable by permission. May be repeated when topic varies. **PREREQUISITE(S):** permission of instructor

### **MATH 9000 - Dissertation**

**Credit Hours:** (1-12) **Description** Independent research for the PhD degree. Grades of S, U, or IP will be given.

## **Mechanical Engineering**

### **MECH 6240 - Fatigue of Materials and Structures**

**Credit Hours:** 3 **Description** Fatigue life prediction and application for structural components, crack initiation and propagation, low and high cycle fatigue, notch strain analysis, and cumulative damage. Engineering

### **MECH 6305 - Fluid Mechanics II**

**Credit Hours:** (3) **Description** Continuation of MECH 3331. Introduction to various topics in advanced fluid mechanics, including flow over immersed bodies; compressible fluid flow; turbomachinery; measurements in fluid mechanics; and inviscid flow.

### **MECH 6309 - Gas Dynamics**

**Credit Hours:** (3) **Description** Concepts in compressible flow, including topics such as isentropic flow, varying area

flow, normal and oblique shockwaves, Fanno flow, and Rayleigh flow.

### **MECH 6312 - Power Generation**

**Credit Hours:** (3) **Description** Application of thermodynamics, fluid mechanics and heat transfer to design and operation of power plants; economic operation of power generation, optimization of resources, and alternate energy systems. **PREREQUISITE(S):** MECH 3312 with a grade of C- or better.

### **MECH 6313 - Heat Transfer II**

**Credit Hours:** (3) **Description** Principles of boiling, condensation, and radiation heat transfer; fundamentals of heat exchanger design.

### **MECH 6315 - Principles of HVAC Systems**

**Credit Hours:** (3) **Description** Psychometric analysis, heating and cooling loads of buildings and analysis of air conditioning systems.

### **MECH 6320 - Mechanics of Materials II**

**Credit Hours:** (3) **Description** Stress-strain analyses of thin-walled cylinders and spheres, springs, laterally loaded struts, struts with initial curvature, rotating disks and cylinders; plastic yielding of beams and shafts; introduction to energy methods.

### **MECH 6324 - Computer Aided Design II**

**Credit Hours:** (3) Former: 6324 **Description** Application of computer aided drafting packages to design of mechanical components and systems. Introduction to fundamental concepts and principles of finite element methods and design optimization. Design project assignments using computerized engineering software for analysis and design solution. **PREREQUISITE(S):** MECH 3323, MECH 3341

### **MECH 6325 - Adv Mech Materials**

**Credit Hours:** (3) **Description** Biaxial stresses, torsion, unsymmetrical bending of beams, shear centers, contact stresses, failure theory, and other selected topics.

### **MECH 6326 - Biomedical System Analys/Mech**

**Credit Hours:** (3) **Description** Introduction to concepts used in analyzing living systems; simulation of body functions with mechanical and computer models; familiarization with the design of mechanical bioengineering devices such as heart valves, heart-lung machines, renal analysis machines.

### **MECH 6327 - Particle Science and Engineering**

**Credit Hours:** 3 **Description**

Behavior of particles in aerosols, colloids, dusty plasmas and particle-laden flows, modeling of particle motion, visualize particle trajectories in a broad range of physical systems, particle measurement techniques. **PRE-REQUISITES:** Graduate student standing, undergraduate level courses in Fluid Mechanics (MECH 3331 or equivalent) and Numerical & Statistical Methods (MECH 3341 or equivalent). \$45 per credit hour **PREREQUISITE(S):** Graduate student standing, undergraduate level courses in Fluid Mechanics (MECH 3331 or equivalent) and Numerical & Statistical Methods (MECH 3341 or equivalent).

### **MECH 6330 - Intro To Composite Mat**

**Credit Hours:** (3) **Description** Introduction to fiber reinforced composite materials. Includes mechanical behavior, strength, design methodology, and implementation of computer aided design.

### **MECH 6331 - Turbomachinery**

**Credit Hours:** (3) **Description** Basic principles of fluid mechanics and thermodynamics as applied to rotating machinery; ideal and actual operating characteristics of pumps, fans, turbines and compressors; design of real systems.

### **MECH 6333 - Aerospace Proplsn Syst**

**Credit Hours:** (3) **Description** Fundamentals of air breathing and rocket propulsion devices; principles of combustion thermodynamics, gas turbine operation, solid and liquid propellants, performance evaluation, and atmospheric and space mission propulsion requirements.

### **MECH 6337 - Internal Combustion Engines**

**Credit Hours:** (3) **Description** Principles of Otto, Diesel, and Brayton cycle engines; effects of various fuels and fuel delivery systems, air induction systems, ignition systems, and pollution control techniques on engine performance.

### **MECH 6339 - Appld Computational Fluid Dyna**

**Credit Hours:** (3) **Description** Introduction to fundamental mathematical models and computational methods for simulating the physics of fluid flow and heat transfer; identify limitation of simulation approach, recognize sources of error, evaluation of solution quality.

### **MECH 6340 - Manufacturing Processes**

**Credit Hours:** (3) **Description** Fundamentals of mechanical behavior of materials, manufacturing properties of materials; casting, bulk deformation, sheet metal forming; material removal processes; processing of polymers, ceramics, and glasses composite materials; powder metallurgy; fastening and joining processes; nontraditional manufacturing processes; economics of integrated design and manufacturing processes.

### **MECH 6341 - Intro to Additive Manufacturing**

**Credit Hours:** (3) **Description** Additive Manufacturing (AM) is a process of joining materials to make objects from 3D model data, usually layer upon layer, as opposed to subtractive manufacturing methodologies. This course offers a thorough introduction to the basics, principles, and applications of commercially available additive manufacturing techniques. **PREREQUISITE(S):** MECH 2320 or CIVL 3121

### **MECH 6344 - Mechanical Controls**

**Credit Hours:** (3) **Description** Fundamental classical control concepts; modeling of linear mechanical control systems; transient, accuracy and performance analyses and design of control systems using root locus sketch, Nyquist diagrams and Bode plots.

### **MECH 6345 - Design Of Mechanisms**

**Credit Hours:** (3) **Description** Graphical and analytical mechanism synthesis techniques for path generation, function generation, rigid body guidance, and optimization of force transmission characteristics. **PREREQUISITE(S):** MECH 3321, MECH 3323 with a grade of C- or better.

### **MECH 6346 - Adv Mechanical Controls**

**Credit Hours:** (3) **Description** Advanced modeling of mechanical control systems; review of digital and optimal

control systems, and simulation of control systems.

**PREREQUISITE(S):** MECH 4344 with a grade of C- or better.

### MECH 6350 - Biomechanics

**Credit Hours:** (4) Former: 6350 *Cross listing* BIOM 6750

**Description** Application of mechanical principles to the human body, with focus on joint function, muscle force transmission and generation, gait, soft-tissue mechanics, injury mechanisms and risk, and experimental measurements.

**PREREQUISITE(S):** CIVIL 3322 or MECH 2320, MATH 2110 or MATH 2422, MATH 2120 or MATH 3402

### MECH 6360 - Selection of Engr Materials

**Credit Hours:** (3) **Description** Detailed study of main classes of materials and their properties and uses; design criteria for various failure modes and selected environment case studies, technical tutorials and design exercises.

**PREREQUISITE(S):** MECH 3320, MECH 2320 with a grade of C- or better.

### MECH 6369 - Process Engineering

**Credit Hours:** (3) **Description** Application of fundamental principles of fluid mechanics, heat transfer, and thermodynamics to the analysis and design, fabrication and construction of process equipment and facilities which include physical and/or chemical transformations. May be repeated when topic varies.

### MECH 6371 - Mechanical Vibrations

**Credit Hours:** (3) **Description** Kinematics of harmonic and non-harmonic vibrations; system of one and several degrees of freedom, free and forced vibrations; self-excited vibrations.

### MECH 6383 - Nondestructive Test I

**Credit Hours:** (3) **Description** Introduction and overview; visual and optical methods; radiographic methods; ultrasonic testing; acoustic emission; magnetic methods; eddy current method; penetrant testing; standards, training, and certification issues; case studies, projects.

### MECH 6384 - Nondestructive Test II

**Credit Hours:** (3) **Description** Nuclear radiographic methods; acoustic and dynamic techniques; magnetic resonance testing; volatile liquid testing; thin layer

chromatography; thermoplastic stress analysis; research techniques; case studies; projects.

### MECH 6393 - Appld Finite Element Analysis

**Credit Hours:** (3) **Description** (Same as BIOM 6393).

Fundamental topics associated with use of finite element analysis in mechanical and biomedical engineering applications; introduction to finite element theory, model generation, CAD interfacing, post-processing of results and validation.

### MECH 6990-6998 - Special Topics in Mechanical Engineering

**Credit Hours:** (1-3)

### MECH 7302 - Theory Continuous Media

**Credit Hours:** (3) **Description** (Same as BIOM 7-8103).

Analysis of stress and deformation at a point; derivation of the fundamental equations in Cartesian tensor notation by application of the basic laws of conservation of mass, energy, and momentum in mechanics and thermodynamics. Grades of S, U, or IP will be given.

### MECH 7303 - Advanced Dynamics

**Credit Hours:** (3) **Description** Formulation of three-dimensional nonlinear dynamical equations of motion for particles and rigid bodies; modeling of dynamic systems; numerical integration. **PREREQUISITES:** MECH 3321, 7341-8341. Grades of S/U, or IP will be given.

### MECH 7305 - Inviscid Flow Theory

**Credit Hours:** (3) **Description** General equations of fluid mechanics; equations of two-dimensional inviscid flow; stream function and velocity potential definitions; irrotational flow; Laplace's equation in various flow fields and geometries; combined flows and superposition.

### MECH 7306 - Viscous Flow

**Credit Hours:** (3) **Description** Advanced introduction to physical principles governing viscous fluid flow; fundamental equations developed from first principles and topic include: flow kinematics, derivation of Navier-Stokes equations, exact solutions of N-S equations for internal and external flows,

dimensional analysis, creeping flows, Vorticity dynamics, flow control.

### **MECH 7307 - Adv Viscous Flow**

**Credit Hours:** (3) **Description** Advanced topics in viscous flow including incompressible and compressible boundary layer theory, free shear flows, stability analysis, turbulent flow modeling, approximate N-S solutions, non-Newtonian flows.

### **MECH 7323 - Conduction Heat Transf**

**Credit Hours:** (3) **Description** Fundamentals of steady-state and transient heat conduction; applications of Fourier series, Laplace transforms, finite differences, and finite elements to conduction problems.

### **MECH 7324 - Radiation Heat Transf**

**Credit Hours:** (3) **Description** Fundamentals of radiation properties of surfaces and radiation exchange between surfaces; black, gray, and non-gray surfaces; integral and numerical techniques employed in radiation problems.

### **MECH 7325 - Convective Heat Trnsfr**

**Credit Hours:** (3) **Description** Fundamentals of free and forced convection heat transfer using differential and integral formulation of laminar and turbulent boundary layers for flow over internal and external surfaces; influence of temperature-dependent properties; convective heat transfer at high velocities.

### **MECH 7332 - Prin Of Propulsion**

**Credit Hours:** (3) **Description** Introduction to principles of rocket propulsion and space mechanics; topics include liquid, solid, and ion rocket motors, and orbital maneuvers employed in typical space missions.

### **MECH 7341 - Engineering Analysis I**

**Credit Hours:** (3) **Description** Analysis of engineering systems using closed form solutions; application of Fourier series and transforms, Laplace transforms, power series methods, vector calculus, ordinary and partial differential equations.

### **MECH 7342 - Engineering Analysis II**

**Credit Hours:** (3) **Description** Continuation of MECH 7341. Theoretical and numerical analysis of engineering systems, and other advanced topics as applied to mechanical engineering problems. Engineering applications of probability and statistics, and hypothesis tests.

### **MECH 7355 - Engineering Optimization**

**Credit Hours:** (3) Former: (6803) **Description** Practical aspects of optimization methodology with emphasis on techniques and procedures relevant to engineering applications in design, operations, and analysis; engineering case studies.

### **MECH 7361 - Mech Bhvr Of Materials**

**Credit Hours:** (3) Former: (6804) **Description** Performance of materials at elevated temperatures; statistical aspect of brittle fracture; advanced treatment of fatigue failure; linear elastic fracture mechanics; friction and wear; ductile failure; strengthening mechanisms; embrittlement modes; case studies in materials selection.

### **MECH 7363 - Fracture Mechanics**

**Credit Hours:** (3) **Description** Linear elastic analysis; elastic-plastic analysis, dynamic and time-dependent fracture; microstructural aspects of fracture; environment-assisted cracking; fatigue crack growth and propagation; analysis of engineering failures; case studies.

### **MECH 7365 - Corrosion**

**Credit Hours:** (3) **Description** Fundamental causes and mechanisms; corrosion control; study of specific corrosion problems.

### **MECH 7371 - Adv Mech Vibrations**

**Credit Hours:** (3) **Description** Modeling of linear and nonlinear vibrational systems; control, measurement, and stability of vibrational systems. Grades of S, U, or IP will be given.

### **MECH 7378 - Intro Comptnl Fluid Dyn**

**Credit Hours:** (3) **Description** Introduction to computational fluid mechanics and heat transfer, finite difference and finite volume methods, stability consideration, basics of numerical computation and analysis of model equations and fluid dynamics equation. Grades of S, U, or IP will be given.



**MECH 7379 - Adv Comptnl Fluid Dyn**

**Credit Hours:** (3) **Description** Advanced introduction to state-of-the-art computational fluid dynamics; advanced grid generation, numerical schemes, and numerical boundary conditions; numerical computation of compressible inviscid and viscous flows, turbulence modeling, skill of post data process. Grades of S, U, or IP will be given.

**MECH 7381 - Finite Element Methods**

**Credit Hours:** (3) **Description** General principles and modeling of engineering systems using the finite element method; applications in fracture mechanics, hydrodynamics, and thermal conduction. Grades of S, U, or IP will be given.

**MECH 7900 - Seminar**

**Credit Hours:** (1) **Description** Graduate students must attend seminars regularly organized by the department. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

**MECH 7901-7909 - Special Topics in Mechanical Engineering**

**Credit Hours:** (1-3)

**MECH 7979 - Contemp Issues In Mech**

**Credit Hours:** (1-3) **Description** Detailed critical reviews of the literature or supervised work on one or more contemporary issues in the field; formal report(s) required. Grades of S, U, or I will be given.

**MECH 7990 - Engineering Practicum**

**Credit Hours:** (1-3) **Description** Studies of related practical mechanical engineering problems as an integral part of the established curriculum under the instruction and supervision of a faculty member. Written and oral reports are mandatory. Grades of S, U, or I will be given. Grades of S, U, or IP will be given.

**MECH 7991 - Research Proposal**

**Credit Hours:** (1-3) **Description** Exhaustive literature search and presentation of both written and oral proposals on engineering topics under supervision of instructor. Grades of S, U, or IP will be given. Grades of A-F, or IP will be given.

**MECH 7992 - Research Project**

**Credit Hours:** (1-6) **Description** Independent research investigation of engineering problem under supervision of instructor for students in non-thesis option; both written and oral reports required. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

**MECH 7994 - Independent Study**

**Credit Hours:** (1-3) **Description** Independent study in Mechanical Engineering on topic selected in conjunction with instructor. Oral and written reports required. May be used for curricular training as a part of an internship program. Only 3 credit hours can be applied to a degree program. Grades of S, U, or IP will be given.

**MECH 7996 - Thesis**

**Credit Hours:** (1-6) **Description** Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

**MECH 8302 - Theory Continuous Media**

**Credit Hours:** (3) **Description** (Same as BIOM 7-8103). Analysis of stress and deformation at a point; derivation of the fundamental equations in Cartesian tensor notation by application of the basic laws of conservation of mass, energy, and momentum in mechanics and thermodynamics. Grades of A-F, or IP will be given.

**MECH 8303 - Advanced Dynamics**

**Credit Hours:** (3) **Description** Formulation of three-dimensional nonlinear dynamical equations of motion for particles and rigid bodies; modeling of dynamic systems; numerical integration. PREREQUISITES; MECH 3321, 7341-8341. Grades of S, U, or IP will be given.

**MECH 8305 - Inviscid Flow Theory**

**Credit Hours:** (3) **Description** General equations of fluid mechanics; equations of two-dimensional inviscid flow; stream function and velocity potential definitions; irrotational flow; Laplace's equation in various flow fields and geometries; combined flows and superposition. Grades of S, U, or IP will be given.

**MECH 8306 - Viscous Flow**

**Credit Hours:** (3) **Description** Advanced introduction to physical principles governing viscous fluid flow; fundamental equations developed from first principles and topic include: flow kinematics, derivation of Navier-Stokes equations, exact solutions of N-S equations for internal and external flows, dimensional analysis, creeping flows, Vorticity dynamics, flow control. Grades of S, U, or IP will be given.

### MECH 8307 - Adv Viscous Flow

**Credit Hours:** (3) **Description** Advanced topics in viscous flow including incompressible and compressible boundary layer theory, free shear flows, stability analysis, turbulent flow modeling, approximate N-S solutions, non-Newtonian flows. May be repeated when the topic varies. Grades of S, U, or IP will be given.

### MECH 8323 - Conduction Heat Transf

**Credit Hours:** (3) **Description** Fundamentals of steady-state and transient heat conduction; applications of Fourier series, Laplace transforms, finite differences, and finite elements to conduction problems. May be repeated when topic varies: Grades of S, U, or IP will be given.

### MECH 8324 - Radiation Heat Transf

**Credit Hours:** (3) **Description** Fundamentals of radiation properties of surfaces and radiation exchange between surfaces; black, gray, and non-gray surfaces; integral and numerical techniques employed in radiation problems. May be repeated when topic varies.

### MECH 8325 - Convective Heat Trnsfr

**Credit Hours:** (3) **Description** Fundamentals of free and forced convection heat transfer using differential and integral formulation of laminar and turbulent boundary layers for flow over internal and external surfaces; influence of temperature-dependent properties; convective heat transfer at high velocities. May be repeated for credit when the topic varies.

### MECH 8332 - Prin Of Propulsion

**Credit Hours:** (3) **Description** Introduction to principles of rocket propulsion and space mechanics; topics include liquid, solid, and ion rocket motors, and orbital maneuvers employed in typical space missions. May be repeated when topic varies.

### MECH 8341 - Engineering Analys I

**Credit Hours:** (3) **Description** Analysis of engineering systems using closed form solutions; application of Fourier series and transforms, Laplace transforms, power series methods, vector calculus, ordinary and partial differential equations.

### MECH 8342 - Engineering Analys II

**Credit Hours:** (3) **Description** Continuation of MECH 7341. Theoretical and numerical analysis of engineering systems, and other advanced topics as applied to mechanical engineering problems. Engineering applications of probability and statistics, and hypothesis tests.

### MECH 8355 - Engineering Optimizatn

**Credit Hours:** (3) **Description** Practical aspects of optimization methodology with emphasis on techniques and procedures relevant to engineering applications in design, operations, and analysis; engineering case studies.

### MECH 8361 - Mech Behvr Of Materials

**Credit Hours:** (3) **Description** Performance of materials at elevated temperatures; statistical aspect of brittle fracture; advanced treatment of fatigue failure; linear elastic fracture mechanics; friction and wear; ductile failure; strengthening mechanisms; embrittlement modes; case studies in materials selection.

### MECH 8363 - Fracture Mechanics

**Credit Hours:** (3) **Description** Linear elastic analysis; elastic-plastic analysis, dynamic and time-dependent fracture; microstructural aspects of fracture; environment-assisted cracking; fatigue crack growth and propagation; analysis of engineering failures; case studies. May be repeated for credit when the topic varies.

### MECH 8365 - Corrosion

**Credit Hours:** (3) **Description** Fundamental causes and mechanisms; corrosion control; study of specific corrosion problems. This course may be repeated with a different type of internship, but only 3 credit hours may be applied toward any degree

### MECH 8371 - Adv Mech Vibrations

**Credit Hours:** (3) **Description** Modeling of linear and nonlinear vibrational systems; control, measurement, and stability of vibrational systems.

### **MECH 8378 - Intro Comptnl Fluid Dyn**

**Credit Hours:** (3) **Description** Introduction to computational fluid mechanics and heat transfer, finite difference and finite volume methods, stability consideration, basics of numerical computation and analysis of model equations and fluid dynamics equation. Grades of S, U, or IP will be given.

### **MECH 8379 - Adv Comptnl Fluid Dyn**

**Credit Hours:** (3) **Description** Advanced introduction to state-of-the-art computational fluid dynamics; advanced grid generation, numerical schemes, and numerical boundary conditions; numerical computation of compressible inviscid and viscous flows, turbulence modeling, skill of post data process. Grades of S, U, or IP will be given.

### **MECH 8381 - Finite Element Methods**

**Credit Hours:** (3) **Description** General principles and modeling of engineering systems using the finite element method; applications in fracture mechanics, hydrodynamics, and thermal conduction.

### **MECH 8901-8909 - Special Topics in Mechanical Engineering**

**Credit Hours:** (1-3)

### **MECH 8979 - Contemp Issues in Mech**

**Credit Hours:** 1-3 *Cross listing N/A* **Description** Detailed critical reviews of the literature or supervised work on one or more contemporary issues in the field; formal report(s) required. **PREREQUISITE(S):** Enrollment in Clinical Nutrition program or permission of instructor. S/U/I

### **MECH 8990 - Engineering Practicum**

**Credit Hours:** (1-3) **Description** Studies of related practical mechanical engineering problems as an integral part of the established curriculum under the instruction and supervision of a faculty member. Written and oral reports are mandatory. Grades of S, U, or I will be given.

### **MECH 8991 - Research Proposal**

**Credit Hours:** (1-3) **Description** Exhaustive literature search and presentation of both written and oral proposals on engineering topics under supervision of instructor. Grades of S, U, or IP will be given. May be repeated when the topic varies.

### **MECH 8994 - Independent Study**

**Credit Hours:** (1-3) **Description** Independent study in Mechanical Engineering on topic selected in conjunction with instructor. Oral and written reports required. May be used for curricular training as a part of an internship program. Only 3 credit hours can be applied to a degree program. May be repeated when topic varies:

### **MECH 9000 - Dissertation**

**Credit Hours:** (1-12) **Description** Grades of S, U, or IP will be given. May be repeated when topic varies.  
**PREREQUISITE(S):** Permission of instructor

## **Music Education**

### **MUSE 6201 - Ind Study Music Educatn**

**Credit Hours:** (1)

### **MUSE 6205 - Marching Band Technique**

**Credit Hours:** (2) **Description** Organizing and conducting the marching band; gridiron charting and marching procedures with a study of precision drill, formation, and pageantry. (Offered spring semester.) **PREREQUISITE(S):** Enrollment in Clinical Nutrition program or permission of instructor.

### **MUSE 6208 - Band Literature**

**Credit Hours:** (3) **Description** History and evolution of wind instruments and wind instrument playing and the history and development of the wind band and its literature, with general background material on the specific composers involved. **PREREQUISITE(S):** Enrollment in Clinical Nutrition program or permission of instructor.

### **MUSE 6209 - Piano Technology for Pianists**

**Credit Hours:** (2) **Description** A historical overview of the instrument and a practical overview of piano technology for the performer and teacher.

### **MUSE 6211 - Vocal Diction I**

**Credit Hours:** (2) **Description** Phonetic study of English and Italian languages in detail; introduction and basic rules of Latin pronunciation; includes International Phonetic Alphabet transcription of songs and arias. Open to collaborative pianists only or by permission of instructor. (Offered alternate years.)

### **MUSE 6212 - Vocal Diction II**

**Credit Hours:** (2) **Description** Phonetic study of German and French languages in detail; introduction and basic rules of Latin pronunciation; includes International Phonetic Alphabet transcription of songs, arias, and class recitations. Open to collaborative pianist only, or by permission of the instructor. Offered alternate years.

### **MUSE 6215 - Jazz Ensemble Technique**

**Credit Hours:** (1) **Description** Knowledge of jazz phrasing, articulation; ensemble setting; repertoire selection; administration of school jazz program. May be repeated for credit when the topic varies.

### **MUSE 6251 - Guitar Pedagogy**

**Credit Hours:** (3) **Description** Analysis of various technical issues and remedies to overcome technical problems; analysis of methods by Sor, Carcassi, Aguado, Vila-Lobos, and Shearer; discussion of pedagogical articles.

### **MUSE 6260-6269 - Special Topics in Music Education**

**Credit Hours:** (1-3) May be repeated for credit when the topic varies.

### **MUSE 6505 - Collab Piano Technique**

**Credit Hours:** (2) **Description** Performance class involving practical study of instrumental and vocal standard repertory and problems of ensemble playing; encourages facility in sight-reading and the ability to assimilate music rapidly; score reading, transposition, and figured-bass realization are introduced as skills necessary to well-rounded musicianship. (Offered spring semester.)

### **MUSE 6508 - Prin Of Suzuki Piano**

**Credit Hours:** (3) **Description** Suzuki philosophy as applied to the development of the child's abilities and the role of the teacher and the parent; analysis of the technical and musical instruction of the beginning piano student. (Offered fall semester.)

### **MUSE 6514 - Brass Pedagogy**

**Credit Hours:** (3) **Description** Current literature, principles, methods, and psychology in brass playing and teaching. Offered even-numbered spring semesters.

### **MUSE 6520 - Percussion Pedagogy**

**Credit Hours:** (3) **Description** Basic principles of and materials for teaching percussion instruments. Offered even-numbered spring semesters. May be repeated with change of topics.

### **MUSE 6521 - Woodwind Pedagogy**

**Credit Hours:** (3) **Description** Practical methods for teaching performance skills to woodwind students; current literature, principles, and methods in teaching woodwind instruments.

### **MUSE 6802 - Level I Orff-Schulwerk**

**Credit Hours:** (3) **Description** Basic Orff Schulwerk techniques, including pentatonic scale, simple burdens, obstinate, and playing pitched and unhitched percussion instruments and soprano recorder. Topics and skills in this highly participatory course will also include vocal and rhythmic training, movement, and improvisation. A degree in music or strong musicianship is required.

**PREREQUISITE(S):** Graduate standing in music or permission of course director.

### **MUSE 7002 - Teaching Music in Higher Edu**

**Credit Hours:** (3) **Description** Problems and practices in the teaching of music in higher education. Topics will include tenure and promotion, syllabus design, curriculum vitae construction, mock interviews, etc.

### **MUSE 7101 - Jazz Program Admin**

**Credit Hours:** (3) **Description** Basic administration of a college level jazz program; course and curriculum development/design, scheduling/planning, material acquisition, basic equipment needs, budgeting and budget

administration, concert and festival planning/programming/production.

### **MUSE 7103 - Level II Orff-Schulwrk**

**Credit Hours:** (1-3) **Description** Builds on the foundation laid in Level I. adding folk melodies, diatonic modes, mixed meter, and lythms from many parts of the world. Accompaniments, musical forms, and improvisations are more complex. Both the alto and soprano recorders are studied. Music, movement, and speech are synthesized in cooperative learning lessons. May be repeated when topic varies.

**PREREQUISITE(S):** MUSE 6802 or successful completion of Orff-Schulwerk Level I at an AOSA-approved course is required.

### **MUSE 7104 - Level III Orff Schlwrk**

**Credit Hours:** (3) **Description** Explores polymeters and functional harmony to include I-V, I-IV, and I-IV-V accompaniment settings. Forms include theme and variations, chaconne & passacaglia, decoration of the third, and ground bass. In pedagogy, students apply the Orff process to conceptual teaching. All recorder voicings are explored in a variety of combinations.

### **MUSE 7202 - Music Early Childhood**

**Credit Hours:** (3) **Description** Research and analysis of contemporary trends in the field of early childhood education, with emphasis on developing appropriate music activities for three to six year olds. May be repeated with a change in topic.

### **MUSE 7203 - Choral Lit & Tech**

**Credit Hours:** (3) **Description** Survey of choral literature from Dunstable to the present, using scores, records, and class performance; analysis of the scores in terms of style, form, and performance problems; techniques of teaching and conducting unfamiliar styles. May be repeated with change of topics.

### **MUSE 7204 - Inst Lit & Tech**

**Credit Hours:** (3) **Description** Specific and intensive research in each student's major instrument, covering (1) history of the instrument; (2) tests, methods and periodicals; (3) orchestral studies; (4) solo and ensemble literature; and (5) listening and performance.

### **MUSE 7207 - Measure Music Behavior**

**Credit Hours:** (3) **Description** The investigation of evaluative tools in music education, formulation, and utilization of measurement devices in music teaching and research. May be repeated for additional credit.

### **MUSE 7210 - Proj Elem Mus Curr**

**Credit Hours:** (3) **Description** Individualized in-depth study of a selected area in elementary school music education. Topics may include curriculum, program planning and development, evaluation of current practices, exploration of new or related fields.

### **MUSE 7211 - Proj Sced Mus Curr**

**Credit Hours:** (3) **Description** Individualized in-depth study of a selected area in secondary school music education, vocal or instrumental; may include curriculum, program planning and development, evaluation of current practices, exploration of new or related fields.

### **MUSE 7213 - Orchrtrn Orff Instrm**

**Credit Hours:** (3) **Description** An analysis of the elemental style of writing for Orff instruments including simple bordun, moving bordun; accompaniments including I-V, I-IV-V, I-II, I-VII, I-VI, I-III; original orchestrations in each harmony.

### **MUSE 7214 - Master Class Orff Schul**

**Credit Hours:** (3) **Description** To be in compliance with the American Orff-Schulwerk Association and with the amount of advanced composition students in the masterclass, the demands of their time outside of class warrant the change. The credit increase replaces the 1-credit ensemble requirement in the core requirements for the degree. **PREREQUISITE(S):** MUSE 7104 Grades of S, U, or IP will be given.

### **MUSE 7216 - Class Piano Pedg Proj**

**Credit Hours:** (1-3) **Description** Students, assigned to piano classes at the University and/or local secondary schools, will assist the principal teacher. May be repeated for a maximum of 3 credits when area of study varies. Grades of S/U, or IP will be given.

### **MUSE 7217 - Adv Collab Tech**

**Credit Hours:** (3) **Description** Individualized in-depth study of techniques and skills needed by professional collaborative pianists working with instrumentalists or singers.

### **MUSE 7219 - Concepts/Teach/Learn**

**Credit Hours:** (3) **Description** Active investigation and exploration of teaching and learning in music education to develop professional attitudes, work habits and responsibilities, determine personal values of effective teaching and learning, transfer historical and philosophical issues to contemporary practice, develop effective communication skills, review the professional research literature, and understand human development process from birth to adult.

### **MUSE 7220 - Research Music Education**

**Credit Hours:** (3) **Description** Active investigation and exploration of research methodologies specific to music education.

### **MUSE 7221 - Music Spec Populations \*\***

**Credit Hours:** (3) **Description** Recognition and comprehension of various disabilities and exceptionalities; techniques for teaching music to exceptional students. May be repeated with change of topics.

### **MUSE 7222 - Rsrch Appl Music Education**

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**Credit Hours:** (3) **Description** Practical application of methodological techniques utilized in music education research; analysis and criticism of research techniques; design, implementation, and reporting of research data.

### **MUSE 7260-7279 - Special Topics in Music Education**

**Credit Hours:** (1-3) May be repeated when topic varies.

### **MUSE 7402 - Hist Phil Music Ed \*\***

**Credit Hours:** (3) **Description** An examination of the historical and philosophical foundations that underline the curricula and instructional programs in music. May be repeated for credit with permission of instructor.

### **MUSE 7403 - Survey Research Mus Ed**

**Credit Hours:** (3) **Description** Designed to acquaint students with theoretical and practical field research, to refine writing

skills, to hypothesize, and to develop potential research problems.

### **MUSE 7404 - Assessment in Music Classroom \*\***

**Credit Hours:** (3) **Description** Examination of aspects and types of assessment in the music classroom, with focus on assessment development and evaluation.

### **MUSE 7501 - Vocal Pedagogy 1**

**Credit Hours:** (3) **Description** Review of the fundamentals of vocal pedagogy; research in the literature of the field; articulation of the concepts of singing through classroom leadership.

### **MUSE 7502 - Vocal Pedagogy 2**

**Credit Hours:** (3) **Description** Resources for teaching voice; hands-on mentored experience; preparation for less common problems.

### **MUSE 7503 - Intro Suzuki Piano**

**Credit Hours:** (3) **Description** Suzuki philosophy as applied to the development of a child's abilities; particular emphasis on listening, parent-teacher relationship, tone production, posture, technique, and Suzuki Piano Volume I-A; includes observation of lessons and classes taught by experienced teachers in the University Suzuki Piano Program.

### **MUSE 7504 - Suzuki Piano Lit/Tech I**

**Credit Hours:** (3) **Description** Analysis of pedagogical materials and fundamental techniques introduced in Volumes I-III of Suzuki Piano School; emphasis on listening, tone production, independence, independence of hands, musical forms and styles, and musical expression; introduction of music reading, scales and chord progressions; observation of lessons and classes taught by experienced teachers in the University Suzuki Piano Program.

### **MUSE 7511 - Projects Piano Pedagogy**

**Credit Hours:** (1-3) **Description** Individual projects designed to explore problems of teaching under supervision. May be repeated for a maximum of 3 credits when the topic varies.

### **MUSE 7513 - Piano Pedagogy I**

**Credit Hours:** (3) **Description** Training teachers for beginning through intermediate level piano instruction; establishing strong artistic, musical, and technical foundation. Grades of S, U, or IP will be given.

### **MUSE 7514 - Piano Pedagogy II**

**Credit Hours:** (3) **Description** Training teachers for advanced piano instruction; extensive readings from renowned artist-teachers and performers, development of ideation and memorization skills; observations and supervised practice teaching. Grades of S, U, or IP will be given.

### **MUSE 7515 - Class Piano Pedagogy**

**Credit Hours:** (3) **Description** Survey of group instruction techniques in the teaching of beginning, intermediate, and early advanced piano, emphasizing observation and practical application; for keyboard majors and/or prospective piano teachers. Grades of S, U, or IP will be given.

### **MUSE 7516 - Adv Prob in Singing Diction**

**Credit Hours:** (3) **Description** Intensive review of English, Italian, Latin, French, and German singing diction. Study of Spanish and Russian. Investigation of problems associated with vocal diction and the singing process. Physiology of diction, vowel modification, and retrogressive effect. Review of current texts and online resources. Pedagogy of diction. Grades of S, U, or IP will be given.

### **MUSE 7520 - Jazz Pedagogy**

**Credit Hours:** (3) **Description** Issues and practical problems of running a jazz program at the post-secondary level. Grades of S, U, or IP will be given.

### **MUSE 7600 - Experiential Learning Credit**

**Credit Hours:** (1-9) **Description** A systematic process for evaluating and credentialing graduate-level learning gained in a variety of contexts. Credit determined by faculty assessor.

### **MUSE 7601 - Suzuki String Pedag I**

**Credit Hours:** (3) **Description** Suzuki philosophy and method; educating Suzuki parents, setting up a program; teaching beginning steps in preparing students for the Twinkle variations and Suzuki Book I. Grades of S, U, or IP will be given.

### **MUSE 7602 - Suzuki String Pedag II**

**Credit Hours:** (3) **Description** Analysis of pedagogical materials and fundamental techniques introduced in volumes I-IV of Suzuki Violin School; exploration of various reading methods, introduction of music theory concepts, two and three octave scales, two octave arpeggio series, and circle of keys. Grades of S, U, or IP will be given.

### **MUSE 7603 - Suzuki String Pedag III**

**Credit Hours:** (3) **Description** Analysis of pedagogical materials and fundamental techniques introduced in volumes V-VI of Suzuki Violin School; two octave major and minor scales and arpeggios, all three octave major and minor arpeggios, and exploration of more advanced reading methods. Grades of S, U, or IP will be given.

### **MUSE 7604 - Suzuki String Pedag IV**

**Credit Hours:** (3) **Description** Analysis of pedagogical materials and fundamental techniques introduced in volumes VII-VIII of Suzuki Violin School; all three octave major and minor scales in circle of keys, two octave chromatic scales, three octave arpeggio sets, all major and minor two octave doublestop scales. Grades of S, U, or IP will be given.

### **MUSE 7605 - Music Dev & Learning**

**Credit Hours:** (3) **Description** Evaluates theories, methods of inquiry, and research designs of musical development from early childhood through adulthood; explores correlations between theories of general intellectual development and music cognition research. Grades of A-F, or IP will be given.

### **MUSE 7606 - Desc/Exp Research Music**

**Credit Hours:** (3) **Description** Develop research concepts and models in quantitative research using experimental, quasi-experimental, and descriptive design models; determine relationships between independent and dependent variables through appropriate research procedures, analysis, and interpretation of findings. Grades of S, U, or IP will be given.

### **MUSE 7607 - Choral Rehearsal Tech \*\***

**Credit Hours:** (3) **Description** Introduction to elements essential to development of a successful choral rehearsal; includes basic ensemble singing techniques, how to unify sound, score study, style considerations, proper diction,

rehearsal planning, and audition procedures. Grades of S, U, or IP will be given.

### **MUSE 7608 - Instr Ens Rehearsl Tech \*\***

**Credit Hours:** (3) **Description** Includes practical skills of baton technique, score reading, basic rehearsal techniques, and theoretical areas of score analysis, repertoire, and programming, as well as classroom management and pacing of materials; instructor will provide on-the-spot critiques of student teaching and conducting. Grades of S, U, or IP will be given.

### **MUSE 7609 - Choral Conduction Techn**

**Credit Hours:** (3) **Description** Application of conducting techniques to communicate technical, gestural, and artistic perceptions of the music; score study, rehearsal techniques, musical interpretation through study of representative scores. Grades of A-F, or IP will be given.

### **MUSE 7702 - Instrum/Wind Conducting**

**Credit Hours:** (3) **Description** Application of techniques studied in basic conducting to rehearsing and performing selected pieces; covers score study, planning, rehearsal techniques, and musical interpretation. Grades of S, U, or IP will be given.

### **MUSE 7801 - Independent Study**

**Credit Hours:** (1-3) **Description** Individual research, under faculty supervision, on a selected topic in music education. May be repeated when topic varies. Grades of S, U, or IP will be given.

### **MUSE 7995 - Master's Project Music Ed \*\***

**Credit Hours:** (1-3) **Description** Preparation of a practical research project as a culmination to the MMU in Music Education. Grades of S, U, or IP will be given.

### **MUSE 7996 - Thesis**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

### **MUSE 7998 - Orff Practicum**

**Credit Hours:** (1-3) **Description** Culminating project for degree in Orff-Schulwerk; consists of 3 videotaped lessons with children, based on appropriately detailed lesson plans that include singing, movement, playing instruments, and creativity. Videos will be reviewed by a committee of music education faculty **PREREQUISITE(S):** Permission of the instructor. Grades of S, U, or IP will be given.

### **MUSE 8002 - Teaching Music in Higher Education**

**Credit Hours:** (3) **Description** Problem and practices in the teaching of music in higher education. Topics will include tenure and promotion, syllabus design, curriculum vitae construction, mock interviews, etc.

### **MUSE 8202 - Music Early Childhood**

**Credit Hours:** (3) **Description** Research and analysis of contemporary trends in the field of early childhood education, with emphasis on developing appropriate music activities for three to six year olds. Grades of S, U, or IP will be given.

### **MUSE 8203 - Choral Lit & Tech**

**Credit Hours:** (3) **Description** Survey of choral literature from Dunstable to the present, using scores, records, and class performance; analysis of the scores in terms of style, form, and performance problems; techniques of teaching and conducting unfamiliar styles.

### **MUSE 8204 - Inst Lit & Tech**

**Credit Hours:** (3) **Description** Specific and intensive research in each student's major instrument, covering (1) history of the instrument; (2) tests, methods and periodicals; (3) orchestral studies; (4) solo and ensemble literature; and (5) listening and performance. May be repeated for credit when topic varies.

### **MUSE 8207 - Measure Music Behavior**

**Credit Hours:** (3) **Description** The investigation of evaluative tools in music education, formulation, and utilization of measurement devices in music teaching and research. May be repeated with change in topic. See online class listings for topic. Grades of S, U, or IP will be given.

### **MUSE 8210 - Proj Elem Mus Curr**



**Credit Hours:** (3) **Description** Individualized in-depth study of a selected area in elementary school music education. Topics may include curriculum, program planning and development, evaluation of current practices, exploration of new or related fields.

### **MUSE 8211 - Proj Sced Mus Curr**

**Credit Hours:** (3) **Description** Individualized in-depth study of a selected area in secondary school music education, vocal or instrumental; may include curriculum, program planning and development, evaluation of current practices, exploration of new or related fields.

### **MUSE 8213 - Orchtrtn Orff Instrm**

**Credit Hours:** (3) **Description** An analysis of the elemental style of writing for Orff instruments including simple bordun, moving bordun; accompaniments including I-V, I-IV-V, I-II, I-VII, I-VI, I-III; original orchestrations in each harmony.

### **MUSE 8217 - Adv Collab Tech**

**Credit Hours:** (3) **Description** Individualized in-depth study of techniques and skills needed by professional collaborative pianists working with instrumentalists or singers.

### **MUSE 8219 - Concepts/Teach/Learn**

**Credit Hours:** (3) **Description** Active investigation and exploration of teaching and learning in music education to develop professional attitudes, work habits and responsibilities, determine personal values of effective teaching and learning, transfer historical and philosophical issues to contemporary practice, develop effective communication skills, review the professional research literature, and understand human development process from birth to adult. May be repeated for credit when topic varies. **PREREQUISITE(S):** Completion of 18 credit hours in the program of study with a minimum graduate GPA of 3.00 and permission of instructor

### **MUSE 8220 - Research Music Education**

**Credit Hours:** (3) **Description** Active investigation and exploration of research methodologies specific to music education. May be repeated with change in topic. See online class listings for topic.

### **MUSE 8221 - Music Spec Populations \*\***

**Credit Hours:** (3) **Description** Recognition and comprehension of various disabilities and exceptionalities; techniques for teaching music to exceptional students.

### **MUSE 8222 - Rsrch Appl Music Education \*\***

**Credit Hours:** (3) **Description** Practical application of methodological techniques utilized in music education research; analysis and criticism of research techniques; design, implementation, and reporting of research data. **PREREQUISITE(S):** PHYS 2120 and CHEM 1120.

### **MUSE 8260-8279 - Special Topics in Music Education**

**Credit Hours:** (1-3) May be repeated when topic varies.

### **MUSE 8402 - Hist Phil Music Ed**

**Credit Hours:** (3) **Description** An examination of the historical and philosophical foundations that underline the curricula and instructional programs in music. **PREREQUISITE(S):** PHYS 2120 or 2020 and MATH 1910. Grades of S, U, or IP will be given.

### **MUSE 8403 - Survey Research Mus Ed**

**Credit Hours:** (3) **Description** Designed to acquaint students with theoretical and practical field research, to refine writing skills, to hypothesize, and to develop potential research problems. **PREREQUISITE(S):** PHYS 2120 or both PHYS 2020 and MATH 1910. Grades of S, U, or IP will be given.

### **MUSE 8404 - Assessment in Music Classroom \*\***

**Credit Hours:** (3) **Description** Examination of aspects and types of assessment in the music classroom, with focus on assessment development and evaluation. **PREREQUISITE(S):** PHYS 2120 or PHYS 2520

### **MUSE 8501 - Vocal Pedagogy I**

**Credit Hours:** (3) **Description** Review of the fundamentals of vocal pedagogy; research in the literature of the field; articulation of the concepts of singing through classroom leadership.

### **MUSE 8502 - Vocal Pedagogy II**

**Credit Hours:** (3) **Description** Resources for teaching voice; hands-on mentored experience; preparation for less common problems.

### **MUSE 8506 - Ind Study Suzuki Teach**

**Credit Hours:** (3) **Description** Independent study of a selected topic in relation to Suzuki philosophy and method. **PREREQUISITE(S):** PHYS 3051.

### **MUSE 8516 - Adv Prob in Singing Diction**

**Credit Hours:** (3) **Description** Intensive review of English, Italian, Latin, French, and German singing diction. Study of Spanish and Russian. Investigation of problems associated with vocal diction and the singing process. Physiology of diction, vowel modification, and retrogressive effect. Review of current texts and online resources. Pedagogy of diction. **PREREQUISITE(S):** PHYS 3010.

### **MUSE 8600 - Experiential Learning Credit**

**Credit Hours:** (1-9) **Description** A systematic process for evaluating and credentialing graduate-level learning gained in a variety of contexts. Credit determined by faculty assessor.

### **MUSE 8605 - Music Dev & Learning**

**Credit Hours:** (3) **Description** Evaluates theories, methods of inquiry, and research designs of musical development from early childhood through adulthood; explores correlations between theories of general intellectual development and music cognition research. **PREREQUISITE(S):** PHYS 2120 and PHYS 3011.

### **MUSE 8606 - Desc/Exp Research Music**

**Credit Hours:** (3) **Description** Develop research concepts and models in quantitative research using experimental, quasi-experimental, and descriptive design models; determine relationships between independent and dependent variables through appropriate research procedures, analysis, and interpretation of findings. May be repeated once. **PREREQUISITE(S):** PHYS 3010, PHYS 3011, PHYS 3211.

### **MUSE 8609 - Choral Conducting Techn**

**Credit Hours:** (3) **Description** Application of conducting techniques to communicate technical, gestural, and artistic perceptions of the music; score study, rehearsal techniques,

musical interpretation through study of representative scores. **PREREQUISITE(S):** PHYS 3010 and PHYS 3011.

### **MUSE 8702 - Instrum/Wind Conducting**

**Credit Hours:** (3) **Description** Application of techniques studied in basic conducting to rehearsing and performing selected pieces; covers score study, planning, rehearsal techniques, and musical interpretation. **PREREQUISITE(S):** PHYS 2120 and PHYS 3011.

### **MUSE 8801 - Independent Study**

**Credit Hours:** (1-3) **Description** Individual research, under faculty supervision, on a selected topic in music education. May be repeated when topic varies. **PREREQUISITE(S):** PHYS 4410.

### **MUSE 9000 - Dissertation**

**Credit Hours:** (1-9) **Description** Grades of S, U, or IP will be given. **PREREQUISITE(S):** PHYS 3211, PHYS 3010, PHYS 3011. **PREREQUISITE(S)** or **COREQUISITE(S):** PSYC 7301 or permission of instructor.

## **Musicians Health and Wellness**

### **MUHW 6810 - Musicians' Health and Wellness**

**Credit Hours:** 1 **Description** Ideas, performances, and perspectives by various faculty and guest lecturers to inform and inspire music students; weekly sessions present workshops to include perspectives on how to stay healthy, prevent and eliminate pain and discomfort, and enhance performance skills through attention to posture, quality of movement, muscle and joint function, and mind-to-body techniques. Additionally, the course will aim to help develop awareness and understanding of physical and mental health and wellness as a musician, how that affects the ability to sustain a career as a musician, and how one may influence other musicians' health and wellness.

## **Music History and Literature**

### **MUHL 6002 - Song Repertory I**

**Credit Hours:** (2) **Description** Survey of solo literature from German and Italian schools of song. This course is offered in the fall of even-numbered calendar years.

### **MUHL 6003 - Song Repertory II**

**Credit Hours:** (2) **Description** Survey of solo literature from the French, British, and American schools of song. This course is offered in the spring of odd-numbered calendar years.

### **MUHL 6005 - History/Literature Organ**

**Credit Hours:** (3) **Description** Literature for the organ and its effect on and interaction with organ design.

### **MUHL 6008 - The Symphony**

**Credit Hours:** (3) **Description** A survey of the development of the symphony from the eighteenth century to the present with a focus on important composers and works, including discussion of orchestration and form, aesthetics, and performance practice.

### **MUHL 6009 - Choral Literature I**

**Credit Hours:** (3) **Description** Survey of choral repertoires from Gregorian chant to 1700; contemporary performance practices; techniques of performing early choral music with modern mixed choirs.

### **MUHL 6010 - Choral Literature II**

**Credit Hours:** (3) **Description** Survey of choral repertoires from 1700 to the present; contemporary performance practices; problems of modern performance.  
**PREREQUISITE(S):** PHYS 7200.

### **MUHL 6011 - String Quart Literature**

**Credit Hours:** (3) **Description** History of the string quartet; survey of its music from Haydn to the present; problems of performance.

### **MUHL 6013 - Women And Music**

**Credit Hours:** (3) **Description** An investigation of the roles women have played throughout the history of Western art music, and the music they have composed, performed, and inspired. The additional fee for this instruction is \$250.00 per semester. **PREREQUISITE(S):** Background in ordinary differential equations and linear algebra.

### **MUHL 6014 - Repertoire of Keyboard Chamber Music**

**Credit Hours:** (3) **Description** Study of the development of works for piano and one other instrument, including piano trios, piano quartets, and piano quintets; stylistic analyses of works from classic, romantic, and twentieth-century repertory. Offered fall semester.

### **MUHL 6015 - Guitar Literature**

**Credit Hours:** (3) **Description** Exploration of selected literature and overview of history of the guitar from 16th century to present; reading of lute tablatures. Offered odd-numbered fall semesters.

### **MUHL 6016 - Jazz Vocal Styles**

**Credit Hours:** (3) **Description** Survey of jazz vocal styles from the 1920's through the present, incorporating listening, lecture, and analysis. Recorded works by important figures from each style and period will be studied.

### **MUHL 6018 - Oratorio Literature**

**Credit Hours:** (3) **Description** A survey of oratorio repertoire with emphasis for the performer; looking at important composers and works, including discussion of form, text, and historical and current performance practice.

### **MUHL 6020 - Solo Brass Literature**

**Credit Hours:** (3) **Description** Examination of the solo literature for brass instruments from the seventeenth century to the present. Offered odd-numbered spring semesters.

### **MUHL 6021 - Amer Amateur Brass Band**

**Credit Hours:** (3) **Description** History and circumstances of the American amateur brass band movement in the 19th and early 20th centuries; practical exploration of its musical repertory.

### **MUHL 6022 - Early Chamber Music**

**Credit Hours:** (3) **Description** Survey of chamber music for strings, winds, and keyboards before 1700; course designed around needs of practicing instrumentalists.

### **MUHL 6030 - Percussion Repertory**

**Credit Hours:** (3) **Description** Survey of available literature for percussion instruments. Offered odd-numbered spring semesters.

### **MUHL 6260 - European Music Seminar**

**Credit Hours:** (1) **Description** Selected topics in theory or composition

### **MUHL 6260-6269 - Special Topics in Music History**

**Credit Hours:** (1-3)

### **MUHL 6304 - Music History Review**

**Credit Hours:** (3) **Description** Review of genres, repertoires, major figures, and development of western music. NOTE: May not be used to fulfill any course requirement in the B.M. degree.

### **MUHL 6407 - History of Opera**

**Credit Hours:** (3) **Description** The history of opera from its origins to the present. The additional fee for this instruction is \$250.00 per semester.

### **MUHL 6500 - String Repertory**

**Credit Hours:** (3) **Description** Histories, tests, methods, periodicals, orchestral studies, and solo and ensemble literature. The additional fee for this instruction is \$250.00 per semester. **PREREQUISITE(S):** PHYS 7200. Grades of A-F, or IP will be given.

### **MUHL 6800 - World Musical Styles**

**Credit Hours:** (3) **Description** Introduction to the study of ethnomusicology; traditional and popular musical styles and the role of music in societies throughout the world. Offered fall semester.

### **MUHL 6801 - American Folk/Popular Music**

**Credit Hours:** (3) **Description** Folk and popular elements in American music; role of mass media in folk and popular music; historical development and interrelationships of various musical styles ranging from 19th century minstrelsy through rock and roll and hip-hop; emphasis on southern

Anglo-American and Afro-American folk and popular musical styles. Offered fall semester.

### **MUHL 6804 - Blues**

**Credit Hours:** (3) **Description** Stylistic development of blues music from its beginnings; relationships to African-American and American culture and history. (Offered spring semester.)

### **MUHL 6805 - History Of Rock & Roll**

**Credit Hours:** (3) **Description** Stylistic origins and development of rock and roll music from its beginning to the present.

### **MUHL 6806 - History Of Jazz**

**Credit Hours:** (3) **Description** Stylistic origins and development of jazz; interaction of jazz and Western classical music styles.

### **MUHL 6807 - Memphis Music**

**Credit Hours:** (3) **Description** Distinctive forms of folk and popular music in Memphis since the beginning of the 20th century; relationships to history, culture, and social patterns of the city and mid-south region; folk music background; blues, jazz, country music, gospel music, soul music, and rock and roll emphasized. Offered spring semester.

### **MUHL 7003 - Piano Repertory**

**Credit Hours:** (3) **Description** Survey of stringed keyboard repertory from Bach and his contemporaries to the present; representative works analyzed in regard to historical, stylistic, formal, and aesthetic features. (Offered fall semester.)

### **MUHL 7260-7269 - Special Topics in Music History**

**Credit Hours:** (1-3)

### **MUHL 7273 - Oratorio Literature**

**Credit Hours:** 3 **Description** A survey of oratorio repertoire with emphasis for the performer; looking at important composers and works, including discussion of form, text, and historical and current performance practice.

## **MUHL 7400 - Bibliography & Research Methods**

**Credit Hours:** (3) **Description** Resources, Tools, and Methods for Research in Music  
Standard Letter

## **MUHL 7401 - Medieval Music**

**Credit Hours:** (3) **Description** History of Western music from the earliest notations to c 1400.

## **MUHL 7402 - Renaissance Music**

**Credit Hours:** (3) **Description** History of Western music in the fifteenth and sixteenth centuries. **PREREQUISITE(S):** Permission of department

## **MUHL 7403 - Baroque Music**

**Credit Hours:** (3) **Description** History of Western music in the seventeenth and early eighteenth centuries.

## **MUHL 7404 - Classic Music**

**Credit Hours:** (3) **Description** History of Western music from c 1730 to c 1825. The additional fee for this instruction is \$250.00 per semester.

## **MUHL 7405 - Music since 1900 \*\***

**Credit Hours:** (3) **Description** History of Western art music from 1900 to the present. The additional fee for this instruction is \$250.00 per semester.

## **MUHL 7406 - Nineteenth Cent Music**

**Credit Hours:** (3) **Description** History of Western music in the nineteenth century.

## **MUHL 7408 - Independent Study**

**Credit Hours:** (1-3) **Description** Individual research, under faculty supervision, on a selected topic in musicology. May be repeated when the topic varies.

## **MUHL 7409 - Rep For Collab Pianists**

**Credit Hours:** (3) **Description** Studies in selected areas of the collaborative piano repertory. May be repeated when topic varies:

## **MUHL 7505 - Seminar Musicology**

**Credit Hours:** (3) **Description** Seminars in selected areas of musicology. May be repeated when topic varies.

## **MUHL 7506 - Composer Studies**

**Credit Hours:** (3) **Description** Exploration of the life and works of a single composer or other musician. May be repeated for credit when the topic varies.

## **MUHL 7507 - Advanced Studies in Art Song**

**Credit Hours:** (3) **Description** Selected topics in the development and performance of the German Lied, the French melodie, and other art-song genres. May be repeated when topic varies.

## **MUHL 7531 - Erly Musical Notation**

**Credit Hours:** (3) **Description** Examination of history of Western musical notations from the ninth through seventeenth centuries; transcription of medieval music from its original sources into modern notation; singing and playing renaissance and early baroque music from facsimiles of original manuscripts and prints.

## **MUHL 7551 - Performance Practice I**

**Credit Hours:** (3) **Description** Historical techniques and conceptions of performance from Gregorian chant through the seventeenth century.

## **MUHL 7552 - Performance Practice II**

**Credit Hours:** (3) **Description** Historical techniques and conceptions of performance since 1700. Students receive the equivalent of two half-hour lessons per week.

## **MUHL 7600 - Experiential Learning Credit**

**Credit Hours:** (1-9) **Description** A systematic process for evaluating and credentialing graduate-level learning gained in a variety of contexts. Credit determined by faculty assessor.

## **MUHL 7800 - Fld Mthd In Ethnmsclgy**

**Credit Hours:** (3) **Description** An exploration of techniques for designing field research subjects and gathering information in the field; special attention to techniques and problems related to the study of southern musical traditions.

### **MUHL 7802 - Sem Ethnomusicology**

**Credit Hours:** (3) **Description** Seminars in selected topics. May be repeated for credit when the topic varies.

### **MUHL 7804 - Intnshp Sthrn Reg Music**

**Credit Hours:** (3) **Description** Practical experience in the application of knowledge and skills learned through the study of southern regional music. The student will do supervised work in an area of music production, presentation, administration, or education for a public agency or in the private sector. This course may be repeated with a different type of internship, but only 3 credit hours may be applied toward any degree.

### **MUHL 7995 - Master's Portfolio**

**Credit Hours:** (1-3) **Description** An option for the final project in the MMu concentration in Musicology; a group of two to four original articles, of a form and scope suitable for submission to scholarly journals.

### **MUHL 7996 - Thesis**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given.

### **MUHL 8260-8269 - Special Topics in Music History**

**Credit Hours:** (1-3)

### **MUHL 8400 - Bibliography & Research Methods**

**Credit Hours:** (3) **Description** Resources, Tools, and Methods for Research in Music

### **MUHL 8401 - Medieval Music**

**Credit Hours:** (3) **Description** History of Western music from the earliest notations to c 1400.

### **MUHL 8402 - Renaissance Music**

**Credit Hours:** (3) **Description** History of Western music in the fifteenth and sixteenth centuries. May be repeated with change in topic. See online class listings for topic.

### **MUHL 8403 - Baroque Music**

**Credit Hours:** (3) **Description** History of Western music in the seventeenth and early eighteenth centuries.

### **MUHL 8404 - Classic Music**

**Credit Hours:** (3) **Description** History of Western music from c 1730 to c 1825.

### **MUHL 8405 - Music since 1900 \*\***

**Credit Hours:** (3) **Description** History of Western art music from 1900 to the present.

### **MUHL 8406 - Nineteenth Cent Music**

**Credit Hours:** (3) **Description** History of Western music in the nineteenth century. May be repeated for a maximum of 6 credit hours. Only 6 hours applicable to degree

### **MUHL 8408 - Independent Study**

**Credit Hours:** (1-3) **Description** Individual research, under faculty supervision, on a selected topic in musicology. May be repeated when the topic varies.

### **MUHL 8409 - Rep For Collab Pianists**

**Credit Hours:** (3) **Description** Studies in selected areas of the collaborative piano repertory. May be repeated when topic varies:

### **MUHL 8505 - Seminar Musicology**

**Credit Hours:** (3) **Description** Seminars in selected areas of musicology. May be repeated when topic varies.

### **MUHL 8506 - Composer Studies**

**Credit Hours:** (3) **Description** Exploration of the life and works of a single composer or other musician. May be repeated for credit when the topic varies.

**MUHL 8507 - Advanced Studies in Art Song**

**Credit Hours:** (3) **Description** Selected topics in the development and performance of the German Lied, the French melodie, and other art-song genres. May be repeated when topic varies.

**MUHL 8531 - Early Musical Notation**

**Credit Hours:** (3) Former: (RECR 6705-15) **Description** Examination of history of Western musical notations from the ninth through seventeenth centuries; transcription of medieval music from its original sources into modern notation; singing and playing renaissance and early baroque music from facsimiles of original manuscripts and prints.  
**PREREQUISITE(S):** Permission of instructor  
**PREREQUISITE(S) or COREQUISITE(S):** PSYC 7301 or permission of instructor.

**MUHL 8551 - Performance Practice I**

**Credit Hours:** (3) Former: (RECR 6905-15) **Description** Historical techniques and conceptions of performance from Gregorian chant through the seventeenth century.

**MUHL 8552 - Performance Practice II**

**Credit Hours:** (3) **Description** Historical techniques and conceptions of performance since 1700.

**MUHL 8600 - Experiential Learning Credit**

**Credit Hours:** (1-9) **Description** A systematic process for evaluating and credentialing graduate-level learning gained in a variety of contexts. Credit determined by faculty assessor.

**MUHL 8800 - Field Method in Ethnomusicology**

**Credit Hours:** (3) **Description** An exploration of techniques for designing field research subjects and gathering information in the field; special attention to techniques and problems related to the study of southern musical traditions.

**MUHL 8801 - Ethnomusicology**

**Credit Hours:** (3) **Description** A survey of concepts, problems, and methods of research in the interpretation of music in different social groups; emphasis on functional and popular music rather than art music, and on cultures other than Western European and North American.

**MUHL 8802 - Sem Ethnomusicology**

**Credit Hours:** (3) **Description** Seminars in selected topics. May be repeated for credit when the topic varies.  
**PREREQUISITE(S):** Permission of instructor

**MUHL 8804 - Internship Southern Regional Music**

**Credit Hours:** (3) Former: (RECR 6705-15) **Description** Practical experience in the application of knowledge and skills learned through the study of southern regional music. The student will do supervised work in an area of music production, presentation, administration, or education for a public agency or in the private sector. This course may be repeated with a different type of internship, but only 3 credit hours may be applied toward any degree.

**MUHL 8805 - Transcription/Analysis of Ethnomusicology**

**Credit Hours:** (3) Former: (RECR 6905-15) **Description** An examination of the problems and methods of transcribing and analyzing non-Western and traditional music; the uses and limitations of staff notation; alternative descriptive systems.

**MUHL 8806 - Sem Southern Regional Music**

**Credit Hours:** (3) **Description** Major issues in the study of southern folk and popular music; includes the relationship between Afro-American and Anglo-American styles and traditions, the relationships of these styles and traditions to African and European music, and the interplay of traditionalism and commercialism in southern music. May be repeated for up to 9 hours of credit

**MUHL 9000 - Dissertation**

**Credit Hours:** (1-9) **Description** Grades of S, U, or IP will be given.

**Music Industry****MUID 6260-6269 - Special Topics in Commercial Music**

**Credit Hours:** (1-3)

**MUID 6603 - Copyright/Music Publishing**

**Credit Hours:** (3) **Description** Detailed examination of intellectual property rights as they relate to the commercial music industry; examination of publishing and its role in the control and exploitation of the package of rights in music property; includes: publishing activities, performing rights organizations, catalog sales and acquisitions, publisher/songwriter relations, and royalty accounting; emphasis on practical applications.

### **MUID 6825 - Concerts and Touring**

**Credit Hours:** (3) **Description** Concert promotion, advertising, talent buying, routing, budgeting, ticketing, sponsorships, merchandise, settlement, and tour development; examines roles of various players in the touring industry with an emphasis on developing alternative revenue streams for touring artists. (Spring)

### **MUID 6840 - Entrepreneurship Comm Music**

**Credit Hours:** (3) **Description** Creation of preliminary business plan for formation of music industry related business; explores motivation for starting a music business, the music marketplace, naming the business, financing, and operation. **PREREQUISITE(S):** MKTG 3010, MGMT 3510, 3410, JOUR 3900, senior standing, and permission of instructor.

### **MUID 7408 - Independent Study**

**Credit Hours:** (1-3) **Description** Individual research, under faculty supervision, on a selected topic in the business or technology of music. May be repeated when topic varies.

### **MUID 7699 - Media Music Prod Prac**

**Credit Hours:** (3) **Description** Grades of A-F, or IP will be given.

### **MUID 7800 - Tech Applic In Music**

**Credit Hours:** (3) **Description** Advanced instruction in current technology assisting the composer, teacher, and practical musician. **PREREQUISITE(S):** PRST 7600 or PRST 7770 and PRST 7400.

### **MUID 8408 - Independent Study**

**Credit Hours:** (1-3) **Description** Individual research, under faculty supervision, on a selected topic in the business or technology of music. May be repeated when topic varies.

### **MUID 8800 - Tech Applic In Music**

**Credit Hours:** (3) **Description** Advanced instruction in current technology assisting the composer, teacher, and practical musician.

## **Music Theory and Composition**

### **MUTC 6010 - Jazz Improvisation Review**

**Credit Hours:** 3 **Description** Accelerated course in the foundational principles of modal harmony, chord/scale relationships and melodic development as related to the art of Jazz Improvisation. It is suggested that Masters and Doctoral students who do not yet meet the requirements for MUTC 7010- Advanced Improvisation, enroll in this course.

**PREREQUISITE(S):** Demonstrated knowledge of the core principles and successful completion of an undergraduate theory sequence. Enrollment is by approval of instructor.

### **MUTC 6202 - Music Theory Review**

**Credit Hours:** (3) **Description** Advanced course in theory, counterpoint, and analysis of literature. Contrapuntal and harmonic techniques. Research; theoretical problems from pedagogical point of view; writing in strict and free styles. Recommended as review course for graduate students. Fall **PREREQUISITE(S):** Permission of instructor.

### **MUTC 6260-6269 - Special Topics in Theory and Composition**

**Credit Hours:** (1-3)

### **MUTC 6501 - Composition**

**Credit Hours:** (3) Former: (7016) **Description** Composition in varied forms for large and small ensembles and solo instruments; analysis of contemporary works and practical application of techniques. May be repeated for additional credit. NOTE: Composition is taught as applied music. Students receive the equivalent of one hour lesson per week. The additional fee for this instruction is \$250.00 per semester.

### **MUTC 6504 - Scoring For Film and Media**



**Credit Hours:** 3 **Description** This course will prepare students to enter careers as composers for film, television, drama, video games and other media. After learning about the history and theory of composing for various media and analyzing examples, students will practice the craft of composing underscore, incidental music, and diegetic music.

### **MUTC 6511 - Electronic Music I**

**Credit Hours:** 3 **Description** An introduction to all software and hardware needed to manipulate and compose digital sound. Students will gain familiarity with programs such as MaxMSP, Supercollider, Garageband and Audacity. **PREREQUISITE(S):** Permission of instructor

### **MUTC 6512 - Electronic Music II**

**Credit Hours:** 3 **Description** A continuation of MUTC 6511, Electronic Music II explores the use of similar technologies and programs in greater depth. Assessment will be assignment and projects based, allowing students to adapt assignments to their own interests. **PREREQUISITE(S):** MUTC 6511, or Permission of Instructor

### **MUTC 6520 - Analytical Approaches to Song**

**Credit Hours:** 3 **Description** This course has a single goal: To introduce students to the information they need to approach and understand (art) song. In so doing, students will explore a wide range of analytical approaches through readings and applications of each method. **PREREQUISITE(S):** MUTC 1009, or Permission of Instructor

### **MUTC 7010 - Adv Improv Pract/Mat**

**Credit Hours:** (3) Former: (7050) **Description** Advanced improvisational techniques, including motivic development, pan-diatonic, panchromatic, and free improvisation; practices involving pentatonic, quartal, cluster, and polychordal compositions; survey and analysis of published improvisation teaching materials.

### **MUTC 7101 - Pedagogy Of Theory**

**Credit Hours:** (3) **Description** A practical course in classroom procedure; demonstrations by students and instructor in teaching the rudiments, elementary and advanced theory, various styles of counterpoint, and ear training; various theoretical systems; bibliography.

### **MUTC 7104 - Analytic Studies Jazz**

**Credit Hours:** (3) **Description** Directed study in selected areas of jazz historical styles; transcription and analysis of selected recordings and scores from specific jazz and popular styles; critical aural study of stylistic interpretation of major jazz big bands and combos of selected style periods.

### **MUTC 7201 - Analytical Survey of Medieval and Renaissance Music**

**Credit Hours:** (3) **Description** Analysis of style features of the music of the eleventh century through the Baroque period.

### **MUTC 7202 - Music of the Common Practice Period**

**Credit Hours:** (3) **Description** Analysis of style features of the music of the late 18th and 19th centuries.

### **MUTC 7203 - Independent Study**

**Credit Hours:** (1-3) Former: (7013) **Description** Individual research, under faculty supervision, on a selected topic in music theory. May be repeated when topic varies.

### **MUTC 7204 - History of Music Theory**

**Credit Hours:** (3) **Description** Overview of historical approaches to music theory and analysis with a focus on theories of tonality during the common-practice period.

### **MUTC 7205 - Post-Tonal Music Theory**

**Credit Hours:** (3) **Description** Analysis of style features of music since 1900.

### **MUTC 7207 - Theories of Musical Meaning**

**Credit Hours:** (3) **Description** Study of the meaning and expression in western musical traditions, through the lenses of linguistics, semiotics and the cognitive sciences.

### **MUTC 7220 - Analysis of Music by Women**

**Credit Hours:** 3 **Description** Study and analysis of music composed by women Standard Letter

### **MUTC 7225 - Popular Music**

**Credit Hours:** 3 **Description** Study and analysis of popular music Standard Letter

### **MUTC 7230 - Analysis of Music for Filmic Media**

**Credit Hours:** 3 **Description** This course will explore music for dramatic media such as film and television from the 20th and 21st centuries. Students will study this music through analysis of musical phenomena (using traditional music theory) and through the lens of cultural theory and criticism.

### **MUTC 7260-7289 - Special Topics in Theory and Composition**

**Credit Hours:** (1-3)

### **MUTC 7501 - Composition**

**Credit Hours:** (2-6) **Description** Free composition in all forms. Applicants to this course are required to submit original works in various forms and media as proof of maturity and technical preparation for graduate work. The course may be repeated with the instructor's permission for successive semesters. NOTE: Composition is taught as applied music. Students receive the equivalent of two half-hour lessons per week. The additional fee for this instruction is \$250.00 per semester.

### **MUTC 7502 - Elec Cmpstnl Techniques**

**Credit Hours:** (3) **Description** Emphasis on tape manipulation, synthesizer operation, and recording techniques in association with individual compositional projects. May be repeated for credit with permission of instructor. The additional fee for this instruction is \$250.00 per semester. May be repeated for a maximum of 6 credit hours.

### **MUTC 7505 - Seminar in Music Theory**

**Credit Hours:** (3) **Description** Topics will vary by semester. May be repeated for credit

### **MUTC 7599 - Composition Practicum**

**Credit Hours:** (3-6) **Description** Grades of S, U, or IP will be given. May be repeated for up to 12 hours

### **MUTC 7600 - Experiential Learning Credit**

**Credit Hours:** (1-9) **Description** A systematic process for evaluating and credentialing graduate-level learning gained in a variety of contexts. Credit determined by faculty assessor.

### **MUTC 7801 - Analytical Techniques**

**Credit Hours:** (3) Former: (MUTC 7330). **Description** In-depth study of varied and analytical approaches to music, with assignments customized to fit the needs of students in different degree programs. Includes approaches to music from several historical periods.

### **MUTC 7802 - Contemp Approach Mus Analysis**

**Credit Hours:** (3) Former: (MUTC 7331) **Description** In-depth study of varied and analytical approaches to music, with assignments customized to fit the needs of students in different degree programs. Includes approaches to music from several historical periods.

### **MUTC 7996 - Thesis**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given.

### **MUTC 8101 - Pedagogy Of Theory**

**Credit Hours:** (3) **Description** A practical course in classroom procedure; demonstrations by students and instructor in teaching the rudiments, elementary and advanced theory, various styles of counterpoint, and ear training; various theoretical systems; bibliography.

### **MUTC 8201 - Analytical Survey of Medieval and Renaissance Music**

**Credit Hours:** (3) **Description** Analysis of style features of the music of the eleventh century through the Baroque period.

### **MUTC 8202 - Music of the Common Practice Period**

**Credit Hours:** (3) **Description** Analysis of style features of the music of the late 18th and 19th centuries.

### **MUTC 8203 - Independent Study**

**Credit Hours:** (1-3) **Description** Individual research, under faculty supervision, on a selected topic in music theory. May be repeated when topic varies. **PREREQUISITE(S):** 7212/8212.

### **MUTC 8204 - History of Music Theory**

**Credit Hours:** (3) **Description** Overview of historical approaches to music theory and analysis with a focus on theories of tonality during the common-practice period.

### **MUTC 8205 - Post-Tonal Music Theory**

**Credit Hours:** (3) **Description** Analysis of style features of music since 1900. **PREREQUISITE(S):** Permission of instructor.

### **MUTC 8207 - Theories of Musical Meaning**

**Credit Hours:** (3) **Description** Study of the meaning and expression in western musical traditions, through the lenses of linguistics, semiotics and the cognitive sciences.

### **MUTC 8220 - Analysis of Music by Women**

**Credit Hours:** 3 **Description** Study and analysis of music composed by women Standard Letter

### **MUTC 8225 - Popular Music**

**Credit Hours:** 3 **Description** Study and analysis of popular music Standard Letter

### **MUTC 8230 - Analysis of Music for Filmic Media**

**Credit Hours:** 3 **Description** This course will explore music for dramatic media such as film and television from the 20th and 21st centuries. Students will study this music through analysis of musical phenomena (using traditional music theory) and through the lens of cultural theory and criticism.

### **MUTC 8260-8289 - Special Topics in Theory and Composition**

**Credit Hours:** (1-3)

### **MUTC 8501 - Composition**

**Credit Hours:** (2-6) **Description** Free composition in all forms. Applicants to this course are required to submit original works in various forms and media as proof of maturity and technical preparation for graduate work. The course may be repeated with the instructor's permission for successive semesters. NOTE: Composition is taught as applied music. Students receive the equivalent of two half-hour lessons per week. The additional fee for this instruction is \$250.00 per semester.

### **MUTC 8502 - Elec Cmpstnl Techniques**

**Credit Hours:** (3) **Description** Emphasis on tape manipulation, synthesizer operation, and recording techniques in association with individual compositional projects. May be repeated for credit with permission of instructor. The additional fee for this instruction is \$250.00 per semester.

### **MUTC 8505 - Seminar in Music Theory**

**Credit Hours:** (3) **Description** Topics will vary by semester. May be repeated for credit.

### **MUTC 8599 - Composition Practicum**

**Credit Hours:** (3-6) **Description** Grades of S, U, or IP will be given. May be repeated for a maximum of 9 credit hours

### **MUTC 8600 - Experiential Learning Credit**

**Credit Hours:** (1-9) **Description** A systematic process for evaluating and credentialing graduate-level learning gained in a variety of contexts. Credit determined by faculty assessor.

### **MUTC 8801 - Analytical Techniques**

**Credit Hours:** (3) **Description** In-depth study of varied and analytical approaches to music, with assignments customized to fit the needs of students in different degree programs. Includes approaches to music from several historical periods.

### **MUTC 8802 - Contemp Approach Mus Analysis**

**Credit Hours:** (3) **Description** In-depth study of varied and analytical approaches to music, with assignments customized to fit the needs of students in different degree programs. Includes approaches to music from several historical periods.

## MUTC 9000 - Dissertation

**Credit Hours:** (1-9) **Description** Grades of S, U, or IP will be given. May be repeated for up to 12 hours

## Nursing

### NURS 6110 - Rsrch/Evd Based Prctice

**Credit Hours:** (3) **Description** Overview of nursing research: components of research, critiques of existing studies, emphasis on interpretation and applications of research findings. **PREREQUISITE(S):** Admission to MSN program.

### NURS 6120 - Contemptry Issues/Trends

**Credit Hours:** (3) **Description** Factors that influence nursing and health care; promotes integration and synthesis of knowledge from previous nursing and general education courses to explore societal and political components that affect delivery of health care. **PREREQUISITE(S):** Admission to MSN program.

### NURS 6317 - Population Focused Nursing/RNs

**Credit Hours:** (3) **Description** Overview of community based health care delivery system at local, state, and national levels; theories and principles of nursing care of communities and aggregates in public health and home health care settings; expands role of RN student to coordinator of care. **PREREQUISITE(S):** NURS 3108, 3201, 3410, 3420, and unencumbered current RN license.

### NURS 6326 - Global Perspectives on Nursing

**Credit Hours:** (3) **Description** This study abroad program is designed for undergraduate and graduate students interested in increasing their understanding of international health care issues as they relate to nursing.

### NURS 7000 - Theoretical Foundations \*\*

**Credit Hours:** (3) **Description** Exploration of theory development in nursing; analysis of selected nursing and related theories; relevance of theory to practice, education, research, and administration; includes process of theory development. **PREREQUISITE(S):** Admission to MSN program or permission of instructor.

### NURS 7001 - Health Care Policy \*\*

**Credit Hours:** (3) **Description** Primary focus on analysis of health-care systems; examines public and private health-care delivery systems; explores future challenges and processes to improve systems. **PREREQUISITE(S):** Admission to MSN program or permission of instructor.

### NURS 7002 - Adv Nursing Research \*\*

**Credit Hours:** (3) **Description** Systematic examination and application of the research process; critically examines concept of evidenced-based practice and its application to nursing. **PREREQUISITE(S):** Admission to MSN program or permission of instructor.

### NURS 7003 - Adv Role Development \*\*

**Credit Hours:** (3) **Description** Provides an in-depth understanding of the legal, historical, political, social, and ethical aspects of advanced nursing; examines traditional and emerging roles for advanced nursing. **PREREQUISITE(S):** Admission to MSN program or permission of instructor.

### NURS 7007 - Adv Role Dev for Nurse Execs \*\*

**Credit Hours:** (3) **Description** Provides an in-depth understanding of the legal, historical, political, social, and ethical aspects of advanced nursing; examines traditional and emerging roles for advanced nursing; and critically review theories and conceptual models from nursing for use in advanced nursing roles. **PREREQUISITE(S):** Admission to MSN program or permission of instructor.

### NURS 7008 - Global Persp Nurs/Hlth Policy \*\*

**Credit Hours:** (3) **Description** This study abroad program is designed for graduate nursing students interested in increasing their understanding of international health care issues as they relate to nursing practice and global health policy. The course intent is to broaden the student's worldview and global perspective of health care and nursing. **PREREQUISITE(S):** Admission to MSN program or permission of instructor.

### NURS 7101 - Advanced Health Assessment \*\*

**Credit Hours:** (3) **Description** Focuses on development of diagnostic reasoning skills, emphasizing application of these skills in the presence of abnormal findings uncovered during physical examination of individuals across the lifespan.

**PREREQUISITE(S):** Undergraduate course in health assessment; admission to MSN program. **COREQUISITE(S):** NURS 7102

### **NURS 7102 - Advanced Health Assessment, Clinical \*\***

**Credit Hours:** (1) **Description** This clinical course emphasizes application of techniques to perform targeted and comprehensive advanced health assessment of the adult client; develops synthesis, critical analysis, interpretation of physical assessment data, diagnostic reasoning, and clinical judgment. Students must achieve a grade of B" or better to progress. **COREQUISITE(S):** NURS 7101

### **NURS 7103 - Advanced Pathophysiology \*\***

**Credit Hours:** (3) **Description** Exploration of theoretical foundations of phenomena that alter health status across the life span; provides foundation for practitioner courses related to diagnosis and treatment of disease processes.

**PREREQUISITE(S):** Undergraduate course in pathophysiology; Admission to MSN program or permission of instructor.

### **NURS 7104 - Advanced Pharmacology \*\***

**Credit Hours:** (3) **Description** Focus on pharmacological actions of drugs commonly prescribed in primary care settings; emphasizes pharmacokinetic and pharmacodynamic principles of drugs, side effects, therapeutic dosages, and drug interactions; integrates legal, ethical, and economic factors of prescriptive authority. **PREREQUISITE(S):** Evidence of successful completion of undergraduate pharmacology course; admission to MSN program; NURS 7103 or permission of instructor.

### **NURS 7105 - Advanced Assessment, Pharmacology, and Pathophysiology for Nurse Educators**

**Credit Hours:** 3 Former: 7105 **Description** This course will explore advanced concepts of pathophysiology, pharmacology, and physical assessment to prepare learners with an advanced knowledge of these concepts across diverse populations and prepare learners to use this knowledge in the role of a nurse educator in various settings.

**PREREQUISITE(S):** Admission to a graduate nursing program. **COREQUISITE(S):** NURS 7106 Standard Letter

### **NURS 7106 - Advanced Assessment, Pharmacology, and Pathophysiology for Nurse Educators Lab**

**Credit Hours:** 1 **Description** This laboratory practicum will provide a practical approach for the use of pathophysiology, pharmacology, and advanced health assessment concepts across diverse health populations in the role of a nurse educator. No **PREREQUISITE(S):** Admission to the MSN program. **COREQUISITE(S):** NURS 7105 Standard Letter

### **NURS 7107 - Differential Diagnosis Across the Lifespan**

**Credit Hours:** 2 **Description** This hybrid course will provide content and resources for students formulating differential diagnosis across the lifespan. It will introduce critical thinking and diagnostic skills to develop evidence-based practices. The significance of interviewing and counseling, logical processing of client information, and constructing differential diagnoses for patients across the lifespan will be emphasized. The course will include 30 hours of clinical practicum. **COREQUISITE(S):** NURS 7101; NURS 7102

### **NURS 7110 - Independent Study \*\***

**Credit Hours:** (1-3) **Description** Independent study of research problems or directed readings and activities in selected area of nursing administration, nursing education, nursing informatics, advanced practice nursing.

**PREREQUISITE(S):** Permission of Associate Dean of Academic Programs.

### **NURS 7204 - Curriculum Design & Ed Theory \*\***

**Credit Hours:** (3) **Description** The course introduces the student to traditional and contemporary considerations for curriculum planning and design as applied to nursing education. An emphasis is placed on curriculum designs and explores major research based theories of adult and nursing education. These concepts will be applied to a variety of settings and/or levels of education.

### **NURS 7205 - Evaluation Mthds in NursingEdu \*\***

**Credit Hours:** (3) **Description** Analysis of testing, benchmarking, and evaluation methods in the clinical practice of nursing across classroom, seminar, and electronic formats; includes evaluation methods to insure competency in the clinical area.

### **NURS 7207 - Nurse Educator Immersion 1 \*\***

**Credit Hours:** (2) **Description** This practicum course integrates theoretical and clinical concepts for diverse health populations in the role of a nurse educator in various settings with a particular focus on the learner's specialty population. **PREREQUISITE(S):** Completion of all non-practicum MSN education courses.

### **NURS 7209 - Nurse Educator Immersion 2 - Residency \*\***

**Credit Hours:** (4) **Description** This practicum course is the capstone for the nurse educator concentration and integrates theoretical and clinical concepts for diverse health populations in the role of the nurse educator in various settings with added focus on the learner's specialty population. **PREREQUISITE(S):** Completion of all non-practicum MSN education courses and NURS 7207.

### **NURS 7301 - Nursing Admin I \*\***

**Credit Hours:** (3) **Description** Comprehensive analysis of concepts required for effective performance of the nurse leader role in microsystems with varied environments; management of a team or division and the populations served; communication, team and relationship building. **PREREQUISITE(S):** Admission to MSN program or permission of instructor.

### **NURS 7302 - Nursing Admin II**

**Credit Hours:** (3) **Description** Comprehensive analysis of concepts required for effective performance of the nurse leader role in macrosystems with varied environments; systems thinking and leadership at the systems level; interprofessional communication and multidisciplinary relationship building. **PREREQUISITE(S):** Admission to MSN program or permission of instructor.

### **NURS 7303 - Health Care Finance \*\***

**Credit Hours:** (3) **Description** Introduction to accounting and financial management, focusing on health-care industry; includes understanding financial reports, cost behavior and profit analysis, cost allocation, pricing and servicing decisions, managerial accounting, planning and budgeting, time value analysis, and financial risk. **PREREQUISITE(S):** Admission to MSN program or permission of instructor.

### **NURS 7304 - Human Resources Mgmt \*\***

**Credit Hours:** (3) **Description** Imparts knowledge and skills required to articulate business models for health-care organizations, utilize accounting principles, analyze financial statements, manage financial resources by developing business plans, establish accurate charging mechanisms, and educate others on financial implications of patient care decisions. **PREREQUISITE(S):** Admission to MSN program or permission of instructor.

### **NURS 7305 - Quality Management \*\***

**Credit Hours:** (3) **Description** Analysis of quality management system models in nursing and health care, including problem and documentation, development of strategies for improvement, intervention and evaluation; focus on quality improvement process aligned with organizational outcomes. **PREREQUISITE(S):** Admission to MSN program or permission of instructor.

### **NURS 7307 - Nursing Management Practicum**

**Credit Hours:** (2) **Description** This practicum experience integrates theory into a reality context of the nurse manager's role. Students will participate in various functions and phases of the nurse manager role. Students, faculty, and preceptors will evaluate the student's strengths and weaknesses related to the skills and competencies of nursing management. Students will be required to complete a minimum of 120 clinical hours during the course. Students must achieve a grade of B" or better to progress. **PREREQUISITE(S):** Admission to MSN and completion of all non-practicum MSN administration courses.

### **NURS 7309 - Nursing Admin Pract \*\***

**Credit Hours:** (4) **Description** Integrates theory into reality context of the administrator's role; provides opportunities to participate in all phases of the executive role in different administrative settings. Students must achieve a grade of B" or

better to progress. **PREREQUISITE(S):** Admission to MSN and completion of all MSN administration courses.

### **NURS 7332 - Rsrce Alloc Nsg/Hlth Care**

**Credit Hours:** (3) **Description** Assesses fiscal environment of health-care organizations; critiques financial management processes; analyzes costing and budgeting; compares financial statement analysis, cost analysis, resource planning, and resource control; evaluates management of health-care organizations' financial resources. May be repeated for a maximum of 6 hours credit. **PREREQUISITE(S):** Admission to MSN or permission of instructor.

### **NURS 7400 - Intro Clncl Hlthcare Environ**

**Credit Hours:** (2)

### **NURS 7401 - Intro Healthcare Informatics**

**Credit Hours:** (3) **Description** Overview of nursing informatics and theoretical foundation for information management within health-care setting; explores impact of automated data management through advances in information technology, health-care information systems, and tele-health.

### **NURS 7402 - Health Care Info Sys & Tech**

**Credit Hours:** (3) **Description** Introduces concepts upon which health-care information systems are developed, implemented, and maintained; addresses operating systems, networking concepts, security issues, workstation design, and evaluation related to the health-care environment.

### **NURS 7403 - Proj Mgt Dec-Anlys HC Info Sys**

**Credit Hours:** (3) **Description** Provides knowledge and skills to analyze and design health-care information systems; discusses informatic models, conceptual frameworks, and practice activities. **PREREQUISITE(S):** NURS 7407

### **NURS 7404 - Proj Mgt Imp & Eval HC Inf Sys \*\***

**Credit Hours:** (3) **Description** Provides advanced knowledge and skills for implementing and evaluating health-care information systems in practice; emphasizes emerging technologies. **PREREQUISITE(S):** NURS 7409

### **NURS 7405 - Hlth Care Data Analysis**

**Credit Hours:** (2) **Description** Presents concepts related to complex data analysis in health-care environment; covers principles of data collection, organization, and statistical analysis and interpretation; provides opportunity to review complex applications for data mining and reporting within the health-care environment.

### **NURS 7406 - Hlthcare Data Anlys/Evd Bsd Pr**

**Credit Hours:** (3)

### **NURS 7407 - Informatics Applications I**

**Credit Hours:** (2) **Description** Practicum builds upon concepts and technology introduced in related informatics course work to provide experiences in informatics applications in health-care settings.

### **NURS 7409 - Informatics Applications II**

**Credit Hours:** (2) **Description** Provides additional experiences in informatics applications in health-care settings; students will explore a variety of informatics applications and identify specific informatics applications based on their practice interests.

### **NURS 7410 - Informatics Practicum**

**Credit Hours:** (4) **PREREQUISITE(S):** NURS 7003

### **NURS 7505 - Advanced Adult Health Nursing \*\***

**Credit Hours:** (3) **Description** Pre- or Co-Requisites: NURS 7101, 7102, 7103, 7104

### **NURS 7515 - Adv Psych/Mentl Health Nursing**

**Credit Hours:** (3) **Description** Pre-Requisites: NURS 7101, 7102, 7103, 7104

### **NURS 7525 - Ecg/Crit Care Nurses \*\***

**Credit Hours:** (3)

### **NURS 7545 - Adv Womens Hlth/Perinatal Nurs \*\***

**Credit Hours:** (3) **Description** Pre- or Co-Requisites: NURS 7101, 7102, 7103, 7104 **PREREQUISITE(S):** r.

### **NURS 7601 - Family Nurse Practnr I \*\***

**Credit Hours:** (3) **Description** Focuses on advanced practice nursing and health-care management of women in diverse populations; includes biopsychosocial interactions affecting women throughout the lifespan. **PREREQUISITE(S):** Admission to graduate studies in psychology or permission of the instructor. NURS 7003 NURS 7101 NURS 7102 NURS 7103 NURS 7104 **COREQUISITE(S):** NURS 7602

### **NURS 7602 - Family Nurs Prac I/Clin \*\***

**Credit Hours:** (2) **Description** Focuses on delivery of advanced nursing care to women; employs various clinical settings with diverse populations for clinical practice. Students must achieve a grade of B" or better to progress.

**PREREQUISITE(S):** NURS 7003 NURS 7101 NURS 7102 NURS 7103 NURS 7104 **COREQUISITE(S):** NURS 7601

### **NURS 7603 - Family Nurs Practnr II \*\***

**Credit Hours:** (3) **Description** Focuses on advanced practice nursing and health-care management of adults and older adults in diverse populations; includes developmental, physiological, pathological, and psychosocial changes relative to health maintenance, acute and chronic illnesses, and life transitions.

**PREREQUISITE(S):** Admission to Family Nurse Practitioner program; NURS 7003 NURS 7101 NURS 7102 NURS 7103 NURS 7104 **COREQUISITE(S):** NURS 7604

### **NURS 7604 - Family Nurs Pract II/CLN \*\***

**Credit Hours:** (4) **Description** Provides opportunities to deliver advanced nursing care to adults and older adults; student completes health assessments of adults and older adults and develops comprehensive plans of care. Students must achieve a grade of B" or better to progress.

**PREREQUISITE(S):** NURS 7003 NURS 7101 NURS 7102 NURS 7103 NURS 7104 **COREQUISITE(S):** NURS 7603

### **NURS 7605 - Family Nurs Pract III \*\***

**Credit Hours:** (3) **Description** Focuses on advanced practice nursing and health-care management of children and adolescents; includes developmental, physiological, pathological, and psychosocial changes relative to health maintenance, acute and chronic illnesses, and developmental transitions within the family context. **PREREQUISITE(S):** Admission to Family Nurse Practitioner program; NURS 7003 NURS 7101 NURS 7102 NURS 7103 NURS 7104 **COREQUISITE(S):** NURS 7606

### **NURS 7606 - Family Nurs Prac III Clin \*\***

**Credit Hours:** (2) **Description** Provides opportunities to deliver advanced nursing care to children and adolescents in families and communities; employs various primary care settings for clinical practice in collaboration with nursing faculty and clinical preceptors. Students must achieve a grade of B" or better to progress. **PREREQUISITE(S):** NURS 7003 NURS 7101 NURS 7102 NURS 7103 NURS 7104 **COREQUISITE(S):** NURS 7605

### **NURS 7609 - FNP Practicum \*\***

**Credit Hours:** (4) **Description** Supervised full-time advanced clinical practice in a primary care setting with immersion into the role of Family Nurse Practitioner; allows for role synthesis and application of concepts in the practice setting. Student must achieve a B" or better to progress. **PREREQUISITE(S):** NURS 7000 NURS 7001 NURS 7002 NURS 7003 NURS 7101 NURS 7102 NURS 7103 NURS 7104 NURS 7601 NURS 7602 NURS 7603 NURS 7604 NURS 7605 NURS 7606 **PREREQUISITE(S)** or **COREQUISITE(S):** NURS 7990

### **NURS 7633 - Pediatric Nurs II**

**Credit Hours:** (3) **Description** Focuses on application of educational theory and principles to develop the leadership role of the professional nurse educator in pediatric settings.

### **NURS 7635 - Advanced Pediatric Nursing \*\***

**Credit Hours:** (3) **Description** This course focuses on health maintenance and health promotion for children and their families experiencing both acute and chronic illness/disabilities are addressed. May be repeated for a maximum of 6 credit hours with permission of the chair or graduate coordinator.

### **NURS 7700 - Interprofessional Pharmacology**



**Credit Hours: 3** **Description** This course introduces the interprofessional health student to basic pharmacology principles including receptor mechanisms, drug distribution and metabolism, and pharmacokinetics. Online lectures, case studies, discussions and presentations on biological systems serve as a basic understanding of pharmacotherapy and drug interactions. **PREREQUISITE(S):** Admission to health-related program of study. Completion of undergraduate courses in biology or chemistry and anatomy/physiology. Standard Letter

### **NURS 7810-7820 - Special Topics in Nursing**

**Credit Hours: (3)** **Description** Topics are varied. **PREREQUISITE(S):** Permission of instructor.

### **NURS 7901 - Comm/Rel Bldg Nurse Exec \*\***

**Credit Hours: (3)** **Description** Imparts knowledge and skills to effectively communicate interprofessionally, build and manage multidisciplinary relationships, influence behaviors, support diversity, implement shared decision making, support community involvement and academic relations.

**PREREQUISITE(S):** Admission to MSN program or permission of instructor.

### **NURS 7902 - Dev Organizational Ldrshp**

**Credit Hours: (3)** **Description** Creates nurse executive skills including foundational thinking skills, personal journey disciplines, systems thinking, succession planning, and change management. **PREREQUISITE(S):** Admission to MSN program or permission of instructor.

### **NURS 7903 - Accountability, Advocacy, Ethics \*\***

**Credit Hours: (3)** **Description** Imparts knowledge and skills to promote accountability; develop career planning paths, seek input from others; uphold high ethical principles and hold self and team accountable; identify areas of risk/liability and facilitate education of risk management and compliance issues; advocate for optimal health care; contribute to the advancement of the profession; and promote participation in professional organization(s). **PREREQUISITE(S):** Admission to MSN program or permission of instructor.

### **NURS 7904 - Fin/Hum Rsrcs Patient Care \*\***

**Credit Hours: (3)** **Description** Imparts knowledge and skills required to articulate business models for health-care organizations; utilize accounting principles; interpret financial statements; develop plans for recruiting, compensating, establishing programs for emergency preparedness and workforce development; defend the business case for nursing; and educate multidisciplinary teams on financial implications of patient care decisions. **PREREQUISITE(S):** Admission to MSN program or permission of instructor.

### **NURS 7905 - Improving Patient Care Del \*\***

**Credit Hours: (3)** **Description** Imparts knowledge and skills to interpret clinical practice knowledge; analyze delivery models/work designs; explain payer mix, case mix index, and benchmark data; articulate and aligns team performance with the organization's performance improvement program and goals; use data and other sources of evidence to inform decision making; apply high reliability concepts; and disseminate research findings with teams.

**PREREQUISITE(S):** Admission to MSN program or permission of instructor.

### **NURS 7906 - Mktg Strat/Inform Mgmt**

**Credit Hours: (3)**

### **NURS 7907 - Evidenc-Based Ldrshp Pract \*\***

**Credit Hours: (3)** **Description** Imparts knowledge and skills to implement strategic management; analyze marketing opportunities; utilize hospital databases, decision support, and expert system programs to plan operational processes and systems; evaluate utility of information systems; involve nursing in planning, designing, choosing, and implementing information systems; and analyze benchmarking, financial, and occupational data. **PREREQUISITE(S):** Admission to MSN program or permission of instructor.

### **NURS 7908 - Healthcare Finance Practicum \*\***

**Credit Hours: (3)** **Description** Collaborates with a practicum mentor to develop healthcare finance competency to articulate the role of financial executives/leaders and typical areas of responsibility, financial operations, financial information distribution, budget cycles, management of capital assets, payers and reimbursement, quality in relation to financial performance, and federal statutes. **PREREQUISITE(S):**

Admission to MSN program or permission of instructor.  
Practicum hours: 180.

### **NURS 7909 - Nurse Executive Practicum \*\***

**Credit Hours:** (4) **Description** Student collaborates with Executive mentor nurse to enhance competency in communication/relationship building, knowledge of health-care environment, leadership, professionalism, and business skills. The mentor should be a Master's prepared nurse working in a leadership role. Exceptions must be cleared with the course faculty before the semester begins. Student must achieve a "B" or better to progress. **PREREQUISITE(S):** Completion of all MSN Executive Leadership courses with the exception of COREQUISITE: NURS 7990 or permission of instructor.

### **NURS 7990 - Scholarly Synthesis \*\***

**Credit Hours:** (3) **Description** As a culminating experience, this course provides the student with the opportunity to complete a scholarly project that demonstrates a synthesis of knowledge acquired in graduate study. The student will write a state of the science paper using a prescribed methodology for literature review and submit the paper as a manuscript for publication. The paper topic and content must be approved by a supervising faculty member and course coordinator.

### **NURS 7996 - Thesis**

**Credit Hours:** (1-3) **Description** Directed study in the completion of the thesis.

### **NURS 8111 - Philosophy of Science \*\***

**Credit Hours:** (3) **Description** The study of historical and contemporary philosophical perspectives and how philosophical views shaped science and scientific inquiry. Scientific explanation, perceived and received views of philosophy of science, and science and cultures will be examined. Emphasis is placed on analysis and evaluation of the nature of knowledge and the development of knowledge in nursing science.

### **NURS 8112 - Middle-Range Theories in Nsg \*\***

**Credit Hours:** (3) **Description** The study of theory construction and concept analysis to evaluate selected middle-range theories and conceptual models related to nursing and health equity that inform nursing practice and research.

### **NURS 8113 - Health Equity Research \*\***

**Credit Hours:** (3) **Description** The study of theories and concepts related to health equity and their applications in health equity research. Emphasis is on examining social determinants of health, health disparities, and vulnerable populations, and key areas in which theory testing is required to set a research agenda and to use valid research methodology for health equity research relevant to nursing.

### **NURS 8211 - Qualitative Methods \*\***

**Credit Hours:** (3) **Description** The study of qualitative research methods used in nursing and the health sciences. Emphasis is on grounded theory, phenomenology, ethnography, life history/narrative, critical incidents, and case study. Provides students with the opportunity to understand the philosophical underpinnings of qualitative research methods, data collection and analysis methods.

### **NURS 8213 - Quantitative Methods \*\***

**Credit Hours:** (3) **Description** The study of quantitative research design and methods in nursing. Emphasis is placed on the research process: review of literature, selecting a research design, operationalizing concepts, sampling, protecting human subjects in research, selecting measurement instruments, collecting data, and analyzing and reporting data. Quantitative approaches to collect data will be examined and applied.

### **NURS 8311 - Doctoral Research Seminar II \*\***

**Credit Hours:** (3) **Description** Explores how research proposals are generated. Emphasis is on determining need, the theoretical basis for the proposed study, and developing and integrative review.

### **NURS 8312 - Doctoral Research Seminar II \*\***

**Credit Hours:** (3) **Description** Explores how the research study is designed including data collection methods and analysis in the development of a research proposal.  
**PREREQUISITE(S):** NURS 8311

### **NURS 8313 - Resp. Conduct of Research \*\***

**Credit Hours:** (1) **Description** This course introduces key concepts and principles related to human subject protections, legal regulations of research ethics, and professional conduct as stipulated by the National Institute of Health. Ethical constructs and established norms in the performance of scientific research activities will be explored.

### **NURS 8314 - Doctoral Research Practicum \*\***

**Credit Hours:** (2-3) **Description** Doctoral Research Practicum focuses on guided study in which students will 1) prepare their research proposal, 2) prepare and take PhD qualifying exam including written and oral components, 3) submit the research proposal for the approval of Institutional Review Board, and 4) prepare for the proposal hearing.

### **NURS 9000 - Doctoral Dissertation**

**Credit Hours:** (1-9) **Description** This course focuses on guiding the student in the development of a doctoral dissertation proposal toward defending his/her dissertation. Grades of S,U, or IP will be given.

## **Nutrition**

### **NUTR 6001-6006 - Special Topics in Nutrition**

### **NUTR 6010 - Management and Food Systems**

**Credit Hours:** 3 Former: NUTR 7522 **Description** Management principles, process and control strategies, roles and responsibilities in food service systems. Application of food preparation and management principles to quantity food production including menu planning, procurement, storage and distribution. Food safety and ServSafe preparation  
**PREREQUISITE(S):** NUTR 2202, ACCT 2010, and MATH 1420

### **NUTR 6602 - Community Nutrition**

**Credit Hours:** (3) **Description** (HMEC, CSED 6602). Nutritional problems and practices of diverse ethnic, age, and socioeconomic groups; educational skill development for intervention; local, regional, national, international agencies that address these nutritional needs. **PREREQUISITE(S):** Permission of instructor.

### **NUTR 6702 - Food Production Intern**

**Credit Hours:** (3) **Description** (HMEC, CSED 6702). Supervised field experience in an area of food production and service preparation for ServSafe, a food safety and sanitation certification. Restricted by Program or by Permit.

### **NUTR 6722 - Catering Internship**

**Credit Hours:** (3) **Description** (HMEC, CSED 6702). Supervised field experience in catering. Restricted by Program or by Permit. **PREREQUISITE(S):** PSYC 7215/PSYC 8215.

### **NUTR 6902 - Study Tour/Foods/Nutr**

**Credit Hours:** (1-3) **Description** (HMEC, CSED 6900). On-the scene knowledge about foods and nutrition. May be repeated for a maximum of 6 credit hours. Only 6 hours applicable to degree. Restricted by Program or by Permit.

### **NUTR 7000 - Sport Nutrition \*\***

**Credit Hours:** (3) **Description** Overview of sport nutrition for graduate students. Course content is delivered entirely online and will cover major macro-nutrients and micro-nutrients important to sports performance as well as strategies for optimal nutrition before, during, and after training and competition.

### **NUTR 7001 - Nutraceuticals and Dietary Sup \*\***

**Credit Hours:** (3) **Description** Overview of nutritional supplementation for graduate students. Course content is delivered entirely online through eCourseware and will cover major classes of nutritional supplements as well as nutritional supplementation strategies for sports performance and general health.

### **NUTR 7002 - Exer & Nutrition Immunology \*\***

**Credit Hours:** (3) **Description** Overview of the effects of exercise and nutrition on the immune system. Course content is delivered entirely online through eCourseware and will cover basic concepts in immunology, the effects of exercise on the immune system and how nutrients alter immune responses.

### **NUTR 7003 - Practicum in Sport Nutrition \*\***

**Credit Hours:** (3) **Description** Students should have delivered a minimum of 250 hours of approved sport nutrition counseling to satisfy this Experiential Learning Credit requirement. This may have included one-on-one or group counseling. Students may have performed this work independently with clients or under the supervision of a mentor/employer. Two verification statements from employers or other individuals who can confirm that the 250 hours of counseling was performed satisfactorily are required. In addition, students must complete a written summary of the work that was performed, documenting the work in detail. The summary should be detailed and complete but should not exceed two written pages.

### **NUTR 7100 - Intr Wet Lab Meth Hlth Studies**

**Credit Hours:** (3) **Description** Theory and practical application of commonly-performed laboratory techniques used in health science research. Techniques consist of phlebotomy, biological sample handling and processing, solution preparation and distribution, use of animals and human subjects in research, dissections, protein analysis, nucleic acid analysis, tissue culture, and cell staining. Lecture contact hours: 2 per week; Laboratory contact hours: 2 per week Grades of S/U, or I will be given.

### **NUTR 7152 - Problems in NUTR**

**Credit Hours:** (3) *Cross listing* ESMS 7152/HPRO 7152/PETE 7152 **Description** Independent study and/or research project on selected problems and issues. **PREREQUISITE(S):** Permission of instructor. Grades of A-F, or IP will be given.

### **NUTR 7182 - Environmental Nutrition \*\***

**Credit Hours:** (3) **Description** Study of the relationships between food, nutrition, and the environment with emphasis on sustainability. **PREREQUISITE(S):** Permission of instructor

### **NUTR 7183 - Complementary NUTR \*\***

**Credit Hours:** (3) **Description** Study of complementary nutrition practices with emphasis on evaluating effectiveness.

### **NUTR 7205 - Nutrition Care Acute/Chronic I**

**Credit Hours:** (3) **Description** (CSED 7205). Didactic and laboratory methods in the selection, performance, and

interpretation of nutrition assessment techniques. Emphasis on the nutrition-care process and terminology. Restricted by Program or by Permit.

### **NUTR 7206 - Lifetime Nutr & Hlth**

**Credit Hours:** (3) **Description** Equips teachers with nutrition knowledge, skills, and application needed to promote health learning. May be repeated for a maximum of 6 credit hours. Restricted by Program or by Permit. Doctoral program students complete PSYC 8999. **PREREQUISITE(S):** Psychology graduate student or permission of instructor

### **NUTR 7212 - Appl Nutr for Health**

**Credit Hours:** (3) **Description** (HMEC, CSED 7212). Basic principles of nutrition and their applications to health and fitness. Not applicable to nutrition concentration. **PREREQUISITE(S):** Psychology graduate student or permission of instructor.

### **NUTR 7305 - Nutrition Care Acute/Chronic II**

**Credit Hours:** (3) **Description** Integration of principles of anatomy, normal and pathophysiology, biochemistry, psychology, anthropology, epidemiology, and foods science with a survey of current nutritional, medical, and pharmacological treatments in the prevention, treatment, and management of diseases and disorders of the body systems. **PREREQUISITE(S):** PSYC 7302 or equivalent.

### **NUTR 7402 - Intrnshp Htr Ed/Food**

**Credit Hours:** (1)

### **NUTR 7405 - Pharmacol Nutr Prof**

**Credit Hours:** (3) **Description** Introduction to pharmaceutical sciences including general principles and phases of drug action, drug and nutrient interactions, pharmaceutical issues in nutrition support, supplement/herbal issues, and highlights of commonly prescribed medication that are used in medical condition which have a nutrition component.

### **NUTR 7412 - Cellular Nutrition I\*\***

**Credit Hours:** (3) **Description** (CSED 7412). Generation, storage, and use of energy; metabolism of carbohydrate, protein, fat, and other macro and micronutrients; control of metabolic processes in normal, anabolic, and catabolic

conditions. May be repeated for a maximum of 6 credit hours. Restricted by program or permit required.

**PREREQUISITE(S):** Psychology graduate student or permission of instructor.

### **NUTR 7422 - Cellular Nutrition II\*\***

**Credit Hours:** (3) **Description** (CSED 7422). Cellular and subcellular metabolism of the micro-nutrients; digestion, absorption, transport, utilization, and excretion of vitamins and minerals; interrelationships of micro- and macronutrients; recent advances in micronutrient research.

### **NUTR 7452 - Comparative Digestion/Nutr**

**Credit Hours:** (3) **Description** Study of the vertebrate digestive system and the relations with diet, development, and health and disease. **PREREQUISITE(S):** PSYC 7302 or equivalent.

### **NUTR 7454 - Molecular Nutrition**

**Credit Hours:** (3) **Description** Study of the cellular and molecular responses of the body to nutrients and the relations with health. Restricted by Program or by Permit.

### **NUTR 7481 - Clin Intern NUTR**

**Credit Hours:** (6) Former: (CSED 7481) **Description** Directed clinical experience (100 hours per credit) in health care settings serving children, adolescent, and adults in clinical and community settings, as well as administration of nutrition services. Emphasis on nutrition in growth and development, maintenance of wellness, and prevention and treatment of disease and disability. May be repeated for up to 12 hours of credit. May be repeated a maximum of 6 hours. **PREREQUISITE(S):** Enrollment in Clinical Nutrition program.

### **NUTR 7710 - Humanitarian Nutrition \*\***

**Credit Hours:** (3) **Description** Study of local and global food/nutrition availability and accessibility. Food justice and environmental stewardship.

### **NUTR 7712 - Cultural Nutrition and Foods \*\***

**Credit Hours:** (3) **Description** Overview of traditional food practices locally and globally to develop understanding of food values.

### **NUTR 7720 - Food Policy \*\***

**Credit Hours:** (3) **Description** A study of major food policy and political considerations impacting our local and global food systems. Emphasis on food policy issues in the US related to food justice and environmental stewardship.

**PREREQUISITE(S):** Admission into the MS Program in Environmental Nutrition, or permission of instructor.

### **NUTR 7722 - Sustainable Food System \*\***

**Credit Hours:** (3) **Description** Current issues related to sustainable food systems. Sustainable agriculture, health, hunger, environmental, economic, food safety, and political perspectives of relevant topics.

### **NUTR 7800 - Internship in Environ NUTR \*\***

**Credit Hours:** (3-6) **Description** Directed field experience focusing on development of knowledge, skills, and techniques needed to function as an environmental nutrition specialist in public or private settings. **PREREQUISITE(S):** Permission of instructor

### **NUTR 7850 - Seminar in Environmental NUTR \*\***

**Credit Hours:** (3) **Description** In depth review and presentation of topic focused on a current issue in environmental nutrition. **PREREQUISITE(S):** Permission of instructor.

### **NUTR 7900 - Research Lab Residency**

**Credit Hours:** 1-6 *Cross listing* (ESMS 7900). **Description** Capstone experience focused on the development and/or application of research evidence to professional practice in either ESMS or Nutrition Science. Involves 40 contact hours per credit hour and is typically undertaken in one of the College of Health Sciences research laboratories, although other UM campus sites focused on evidence-based practice may be considered for approval. May be repeated for a maximum total of 6 credit hours S/U/IP

### **NUTR 7950 - Applied Project in NUTR \*\***

**Credit Hours:** (1-6) **Description** Scholarly capstone experience in which students integrate and apply discipline-specific knowledge, skills, and insights in developing a product related to their professional goals

### **NUTR 8000 - Sport Nutrition\*\***

**Credit Hours:** (3) **Description** Overview of sport nutrition for graduate students. Course content is delivered entirely online and will cover major macronutrients and micronutrients important to sports performance as well as strategies for optimal nutrition before, during, and after training and competition.

### **NUTR 8001 - Nutraceuticals and Dietary Sup\*\***

**Credit Hours:** (3) **Description** Overview of nutritional supplementation for graduate students. Course content is delivered entirely online through eCourseware and will cover major classes of nutritional supplements as well as nutritional supplementation strategies for sports performance and general health.

### **NUTR 8002 - Exer & Nutrition Immunology\*\***

**Credit Hours:** (3) **Description** Overview of the effects of exercise and nutrition on the immune system. Course content is delivered entirely online through eCourseware and will cover basic concepts in immunology, the effects of exercise on the immune system and how nutrients alter immune responses.

### **NUTR 8100 - Intr Wet Lab Meth Hlth Studies**

**Credit Hours:** (3) **Description** Theory and practical application of commonly-performed laboratory techniques used in health science research. Techniques consist of phlebotomy, biological sample handling and processing, solution preparation and distribution, use of animals and human subjects in research, dissections, protein analysis, nucleic acid analysis, tissue culture, and cell staining. Lecture contact hours: 2 per week; Laboratory contact hours: 2 per week. Grades of S/U, or I will be given.

### **NUTR 8152 - Problems in NUTR**

**Credit Hours:** (3) *Cross listing* ESMS 7152/HPRO 7152/PETE 7152. **Description** Independent study and/or research project on selected problems and issues.

**PREREQUISITE(S):** Permission of instructor. Grades of A-F, or IP will be given.

### **NUTR 8412 - Cellular Nutrition I**

**Credit Hours:** (3) **Description** (CSED 7412). Generation, storage, and use of energy; metabolism of carbohydrate, protein, fat, and other macro and micronutrients; control of metabolic processes in normal, anabolic, and catabolic conditions. May be repeated for a maximum of six hours. **PREREQUISITE(S):** Permission of instructor.

### **NUTR 8422 - Cellular Nutrition II**

**Credit Hours:** (3) **Description** (CSED 7422). Cellular and subcellular metabolism of the micro-nutrients; digestion, absorption, transport, utilization, and excretion of vitamins and minerals; interrelationships of micro- and macronutrients; recent advances in micronutrient research.

### **NUTR 8452 - Comparative Digestion/NUTR**

**Credit Hours:** (3) **Description** Study of the vertebrate digestive system and the relations with diet, development, and health and disease.

### **NUTR 8454 - Molecular Nutrition**

**Credit Hours:** (3) **Description** Study of the cellular and molecular responses of the body to nutrients and the relations with health.

## **Philosophy**

### **PHIL 6211 - Ancient Philosophy**

**Credit Hours:** (3) **Description** Readings from primary sources, supplemented by commentary from antiquity and modern scholarship, including Pre-Socratics, Plato, Aristotle, and the Hellenistic period. May be repeated for a maximum of 6 credit hours. **PREREQUISITE(S):** Permission of instructor.

### **PHIL 6311 - Modern Philosophy**

**Credit Hours:** (3) **Description** Readings from major philosophers of 17th to early 19th centuries, supplemented by commentaries from modern and contemporary sources. May be repeated for a maximum of six hours. Restricted to

philosophy graduate students or permission of the instructor.  
**PREREQUISITE(S):** Permission of instructor.

### PHIL 6421 - Philosophy Of Mind

**Credit Hours:** (3) **Description** Survey of major issues and positions in recent philosophy of mind; behaviorism; reductive, non-reductive, and eliminative versions of materialism; functionalism; mental causation; phenomenal consciousness; psychoanalysis and the unconscious; computational and connectionist models of mind.  
**PREREQUISITE(S):** Permission of instructor.

### PHIL 6422 - Analytic Philosophy of Language

**Credit Hours:** (3)

**Description** Major developments in the philosophy of language - predominantly in the English speaking world - during the 20th and 21st centuries. Themes may include the influence of modern logic on linguistic analysis, the development of natural language semantics and pragmatics, modality in language and metaphysics, theories of meaning and reference, ordinary language philosophy, speech acts, holism, metaphor, slurs, hate speech, and psycho-linguistics.

**PREREQUISITE(S):** Permission of the instructor.

### PHIL 6441 - Recent Continental Phil

**Credit Hours:** (3) **Description** Major figures in 20th century European thought; movements such as phenomenology, existentialism, structuralism, critical theory, and hermeneutics.  
**PREREQUISITE(S):** Permission of the instructor.

### PHIL 6551 - Social & Political Phil

**Credit Hours:** (3) **Description** In depth discussion of major philosophical theories of the individual and the state; emphasis on concepts of society, culture, institutions, government, law, power, authority, rights, and obligations.  
**PREREQUISITE(S):** Permission of instructor.

### PHIL 6632 - Advanced Logic

**Credit Hours:** (3) **Description** The nature of axiomatic systems and foundations of mathematics.  
**PREREQUISITE(S):** Permission of instructor.

### PHIL 6661 - Philosophy Of Science

**Credit Hours:** (3) **Description** Survey of several central issues in the philosophy of science. Topics may include issues such as competing understandings of scientific practice, scientific explanation, the continuity and discontinuity of scientific theories, and the relations between the various sciences. **PREREQUISITE(S):** Permission of Instructor.

### PHIL 6671 - Aesthetics

**Credit Hours:** (3) **Description** Treatment of philosophical theories concerning the nature and role of art and the possibility of aesthetic evaluation. **PREREQUISITE(S):** Permission of Instructor.

### PHIL 6801-6820 - Special Topics in Philosophy

**Credit Hours:** (3) **Description** Topics in areas of epistemology, metaphysics, philosophy of language, philosophy of mind, logical theory, axiology. Area to be covered will be in *Schedule of Classes*. May be repeated for a maximum of 15 credits. **PREREQUISITE(S):** Permission of Instructor.

### PHIL 7001 - Proseminar

**Credit Hours:** (1-3) **Description** Philosophical writing and research, and the teaching of philosophy. May be repeated for a maximum of 6 credit hours. Restricted by Program or Permit. Grades of S, U, or IP will be given

### PHIL 7002 - Tchng Skills Grad Asst

**Credit Hours:** (1-3) **Description** This course is designed to impart the skills necessary for both serving as a teaching assistant as well as for designing and teaching one's own philosophy course. NOTE: Philosophy majors may not use this course to fulfill degree requirements. May be repeated for up to 12 hours. Restricted by Program or Permit. Grades of S, U, or IP will be given.

### PHIL 7020 - Seminar Major Figures

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### PHIL 7030 - Sem Continentl Phil

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### **PHIL 7040 - Sem Normative Phil**

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### **PHIL 7201 - Sem Classical Phil**

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### **PHIL 7203 - Sem Contemporary Phil**

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### **PHIL 7301 - Sem Modern Phil**

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### **PHIL 7414 - Seminar In Metaphysics**

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### **PHIL 7421 - Seminar In Epistemology**

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### **PHIL 7442 - Seminar On Heidegger**

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### **PHIL 7514 - Cognitive Science Seminar**

**Credit Hours:** (3) *Cross listing* AUSP 7514, PSYC 7514, COMP 7514 **Description** Systematic study of current topics in Cognitive Science with an emphasis on its interdisciplinary nature. Topics will vary each semester. Only nine credit hours may be counted toward degree requirements. Restricted by Program or by Permit.

### **PHIL 7541 - Social/Political Phil**

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### **PHIL 7551 - Seminar Ethical Theory**

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### **PHIL 7800-7810 - Special Topics in Philosophy**

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### **PHIL 7994 - Reading And Research**

**Credit Hours:** (1-6) **Description** Independent study in a specific area of philosophy chosen by a master's student and approved and supervised by a member of the graduate faculty of the philosophy department. NOTE: May be repeated for a maximum of 6 credit hours. Additional hours may be granted with approval of the department's Director of Graduate Studies. Restricted by Program or Permit. Grades of S, U, or IP will be given.

### **PHIL 7996 - Thesis**

**Credit Hours:** (1-9) **Description** May be repeated for a maximum of 9 credit hours. Grades of S, U, or IP will be given. Restricted by Program or by Permit.

### **PHIL 8001 - Proseminar**

**Credit Hours:** (1-3) **Description** Philosophical writing and research, and the teaching of philosophy. May be repeated for a maximum of 6 credit hours. Restricted by Program or Permit. Grades of S, U, or IP will be given.



### PHIL 8002 - Tchng Skills Grad Asst

**Credit Hours:** (1-3) **Description** This course is designed to impart the skills necessary for both serving as a teaching assistant as well as for designing and teaching one's own philosophy course. **NOTE:** Philosophy majors may not use this course to fulfill degree requirements. May be repeated for up to 12 hours. Restricted by Program or Permit. Grades of S, U, or IP will be given.

### PHIL 8020 - Seminar Major Figures

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### PHIL 8030 - Sem Continentl Phil

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. May be repeated for a maximum of 9 credit hours. **PREREQUISITE(S):** Permission of Instructor.

### PHIL 8040 - Sem Normative Phil

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### PHIL 8051 - Collo Phil Problems

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### PHIL 8201 - Sem Classical Phil

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### PHIL 8203 - Sem Contemporary Phil

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### PHIL 8252 - Sem On Aristotle

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### PHIL 8301 - Sem Modern Phil

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### PHIL 8414 - Seminar In Metaphysics

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### PHIL 8421 - Sem In Epistemology

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### PHIL 8442 - Seminar On Heidegger

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### PHIL 8514 - Cognitive Science Seminar

**Credit Hours:** (3) *Cross listing* A USP 8514, PSYC 8514, COMP 8514 **Description** Systematic study of current topics in Cognitive Science with an emphasis on its interdisciplinary nature. Topics will vary each semester. Only nine credit hours may be counted toward degree requirements. **PREREQUISITE(S):** Permission of Instructor.

### PHIL 8541 - Social/Political Phil

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

### PHIL 8551 - Seminar Ethical Theory

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

## PHIL 8800-8810 - Special Topics in Philosophy

**Credit Hours:** (3) **Description** Information will be in *Schedule of Classes*. **PREREQUISITE(S):** Permission of Instructor.

## PHIL 8994 - Adv Reading & Research

**Credit Hours:** (1-6) **Description** Independent study in a specific area of philosophy chosen by a doctoral student and approved and supervised by a member of the graduate faculty of the philosophy department. May be repeated for a maximum of 6 credit hours. Additional hours may be granted with approval of the department's Director of Graduate Studies. Restricted by Program or Permit. Grades of S, U, or IP will be given.

## PHIL 9000 - Dissertation

**Credit Hours:** (1-12) May be repeated for a maximum of 12 credit hours. Restricted by Program or Permit. Grades of S, U, or IP will be given.

## Physical Education Teacher Education

### PETE 7001 - App Sci Prin/PETE

**Credit Hours:** (3) **Description** Applied study of structure and function of human body, including mechanical and physiological principles of human movement, motor learning, and psychological and sociological aspects of physical education.

### PETE 7002 - Curriculum in PETE

**Credit Hours:** (3) **Description** Study of different curricular models and how to set up yearly and unit plans.

### PETE 7003 - Tchng Indv/Team Sports

**Credit Hours:** (3) **Description** Augments physical educators' skills, knowledge, and attitudes about individual and team sports and the techniques of teaching these activities to different age groups. Grades of A-F, or IP will be given.

### PETE 7004 - Learner Assessment PETE

**Credit Hours:** (3) **Description** Provides students with a range of tools to assess school children in psychomotor, cognitive, affective, and fitness areas.

### PETE 7005 - Educational Gym&Dance

**Credit Hours:** (3) **Description** Prepares students to teach educational gymnastics and dance in school settings, as well as providing opportunities to develop individual skills.

### PETE 7006 - Instruction in PETE \*\*

**Credit Hours:** (3) **Description** Provides students with a range of instructional models that can be used in teaching physical education.

### PETE 7007 - Advanced Clinical Pract

**Credit Hours:** (3-9) **Description** Full-time, planned, and supervised experience in a physical education setting for K-12 certified students, the majority already placed in a school setting; supervision by HMSE faculty. **COREQUISITE:** PETE 7008.

### PETE 7008 - PETE Professional Seminar

**Credit Hours:** (1-3) **Description** Includes a range of professional issues and the development of a professional portfolio. **COREQUISITE:** PETE 7007.

### PETE 7133 - Current Readings PETE

**Credit Hours:** (3) **Description** Directed readings in area of physical education teacher education; materials selected to strengthen areas of study.

### PETE 7142 - Seminar in PETE

**Credit Hours:** (1-3) **Description** May be repeated when topic changes for a maximum of 3 credits. Restricted by Program or by Permit.

### PETE 7152 - Problems in PETE

**Credit Hours:** (1-3) *Cross listing* ESMS 7152/HPRO 7152/NUTR 7152 **Description** Independent study and/or research project on selected problems and issues. May be repeated for a maximum of 3 credit hours.

### PETE 7201 - Instructional Models/PETE \*\*

**Credit Hours:** (3) **Description** Study and reflection on models of instruction unique to physical education: large class sizes, open indoor and outdoor settings, and greater diversity of students and learning styles; emphasis on reading, discussion, and application based on understanding instructional strategies and various instructional models for physical education.

### **PETE 7202 - Curr & Instr Model in PETE \*\***

**Credit Hours:** (3) **Description** Study of and reflection on curriculum/models of instruction in school-based physical education and other physical activity programs. Study of the general field of curriculum and instructional models in physical education that reflect appropriate curricular decisions and instructional interventions.

### **PETE 7203 - Assessment & Eval in PETE \*\***

**Credit Hours:** (3) **Description** Study and reflection on learner, program, and teacher assessment/evaluation strategies to provide teachers and researchers with knowledge and skills necessary to conduct both formative and summative evaluations for physical education.

### **PETE 7204 - Instructional Supv/PETE \*\***

**Credit Hours:** (3) **Description** Study and reflection on models of instructional supervision in physical education, including systematic supervision, rationale, models, research, and clinical supervision and evaluation of teachers, to provide an empirical base for the development of the physical education systematic supervision model.

### **PETE 7205 - Issues In Urban PETE \*\***

**Credit Hours:** (3) **Description** Considers the complex problems and unique possibilities that face physical education teachers and students in culturally diverse urban settings, examining different theoretical perspectives and practical approaches and their relationship to the success of children and youth in urban schools. Restricted to Program or by Permit.

### **PETE 7207 - Adaptive Technologies in PETE \*\***

**Credit Hours:** (3) **Description** Study and reflection on incorporation of adaptive technologies to personalize the learner's experience in school PE and other physical activity programs. Includes study of current adaptive technologies,

adaptive learning theories, curriculum change, and curriculum design for personalized learning.

### **PETE 7501 - Organizatn/Analys PETE \*\***

**Credit Hours:** (3) **Description** The teaching-learning process in physical education, focusing on teacher behaviors, student behaviors, academic learning time, teacher effectiveness as documented in both short and long term process-product studies, functional curriculum in the schools, descriptive analysis of coaches and athletes, and case study approaches.

### **PETE 7902-7911 - Special Topics in Physical Education Teacher Education**

**Credit Hours:** (3) **Description** Current topics in physical education teacher education.

### **PETE 7950 - Applied Project in PETE**

**Credit Hours:** (1-6) **Description** Scholarly capstone experience in which students integrate and apply discipline-specific knowledge, skills, and insights in developing a product related to their professional goals as approved by a three-person project committee.

## **Physics and Material Science**

### **PHYS 6000-6009 - Special Topics in Physics**

**Credit Hours:** (3) **Description** Selected topics of current interest in physics. Topics are varied and announced in online class listings

### **PHYS 6020 - Soft Matter and Biological Physics**

**Credit Hours:** (3) **Description** Random walks, diffusion, entropic forces, colloidal suspensions, polymers, self-assemblies, lipid membranes, transitions in biomolecules, molecular machines in biomembranes. Restricted by Program or by Permit.

### **PHYS 6021 - Applied Radiation Physics**

**Credit Hours:** (3) **Description** Applied radiation and radioactivity; types of radiation, radiation management,

interaction with matter, and biological effects; radiation safety aspects emphasized.

### PHYS 6040 - Medical Physics

**Credit Hours:** (3) **Description** Physics of sensory, respiratory, and circulatory systems; physical basis of radiology and nuclear medicine. Restricted by Program or by Permit.

### PHYS 6050 - Astrophysics I

**Credit Hours:** (3) **Description** Principles of physics applied to the objects of the universe, e.g., planets, sun, stars, etc. Also includes an introduction to electromagnetic radiation and telescopes. Recommended for science and engineering majors interested in astronomy. May be repeated for maximum of 20 credits with change in topic

### PHYS 6051 - Astrophysics II

**Credit Hours:** (3) **Description** Comparative and theoretical examination of how national and international actors conceptualize, identify, perceive, and address threats to their security; includes technological and social change, capabilities and limitations of defense decision makers and bureaucracies, and role of international institutions. Students can enroll in this course for 3 hours and then repeat once for 1 hour. Restricted by Program or by Permit. Grades of A-F, or IP will be given.

### PHYS 6055 - Stellar and Galactic Astronomy

**Credit Hours:** 3 **Description** An introduction to modern astronomy with emphasis on the structure and evolution of stars and objects within our own Galaxy. The goal is to show students how we can apply basic physical principles (gravity, fluid dynamics, electromagnetism, etc.) to understand the properties of astronomical objects. The topics covered include the sun and stars, extrasolar planets, interstellar matter, star clusters, our galaxy, and the supermassive black hole at the center of the Milky Way. Numerous discussions, video demonstrations, and discovery-based laboratories further enrich the learning experience. Standard Letter

### PHYS 6056 - Extragalactic Astronomy

**Credit Hours:** 3 **Description** An introduction to modern astronomy with emphasis on the structure and evolution of galaxies, active galactic nuclei and the early Universe. The

goal is to show students how we can apply basic physical principles (gravity, fluid dynamics, electromagnetism, etc.) to understand the properties of astronomical objects. The topics covered include external galaxies, clusters of galaxies, supermassive black holes and their environments, active galactic nuclei, quasars, large-scale structure and the Big Bang theory. Numerous discussions, video demonstrations, and discovery-based laboratories further enrich the learning experience. Standard Letter

### PHYS 6110 - Nuclear and Particle Physics

**Credit Hours:** (3) **Description** Properties of atomic nuclei; radioactive transitions; alpha, beta, and gamma decay; binding energy, nuclear forces, and nuclear models. May be repeated for maximum of 24 hours credit

### PHYS 6112 - Mechanics II

**Credit Hours:** (3) **Description** Hamilton's principle and Lagrangian/Hamiltonian dynamics, central force motion, dynamics of systems of particles, rigid body motion, and fluid dynamics. **PREREQUISITE(S):** PHYS 3111.

### PHYS 6211 - Waves and Optics

**Credit Hours:** (3) **Description** Mathematical description of vibrations and waves with application to sound and electromagnetic waves; geometrical optics; interference and diffraction; holography; introduction to laser physics and photonics.

### PHYS 6212 - Electricity and Magnetism II

**Credit Hours:** (3) **Description** Continuation of PHYS 3211. **PREREQUISITE(S):** PHYS 3211.

### PHYS 6222 - Environmental Physics

**Credit Hours:** (3) **Description** Application of gas laws, transport laws, and heat transfer in environmental processes; environmental radiation (solar and terrestrial), energy system of atmosphere and hydrosphere, and energy resources and their impact upon environment. **PREREQUISITE(S):** PHYS 2020 or PHYS 2120.

### PHYS 6230 - Electronics

**Credit Hours:** (4) **Description** Theory and application of electronic devices; emphasis on scientific instrumentation. Laboratory oriented course including basic semiconductors,

integrated circuits, and microprocessors. Three lecture hours, three laboratory hours per week. **PREREQUISITE(S):** PHYS 2120

### **PHYS 6300 - Advanced Topics in Astronomy**

**Credit Hours:** 3 **Description** This course is designed primarily for students interested in astronomy. In -depth, organized study of a contemporary topic of interest not normally covered in the undergraduate physics and astronomy curriculum. Possible subjects for study are the solar system, extragalactic astronomy and cosmology, the inconstant universe, astrobiology, planetary geology.

### **PHYS 6410 - Introduction to Quantum Theory**

**Credit Hours:** (3) **Description** Historical background of quantum theory, mathematical formalism of quantum mechanics, solutions of Schrodinger equation for bound and scattering states in one dimension, harmonic oscillator, angular momentum, and introduction to atomic and molecular structures. Restricted by Program or by Permit.

### **PHYS 6420 - Introduction to Computational Physics**

**Credit Hours:** (3) **Description** Introduction to computer-based techniques for modeling physical systems. Computational methods are used to solve problems in mechanics, electricity and magnetism, and quantum mechanics.

### **PHYS 6510 - Thermal and Statistical Physics**

**Credit Hours:** (3) **Description** Introduction to thermodynamics and statistical mechanics, includes topics such as temperature, work, heat, entropy, thermodynamic potentials, ideal gases, phase transitions, classical and quantum ensembles, and partition functions.

### **PHYS 6610 - Solid State Physics**

**Credit Hours:** (3) **Description** Crystal structures, crystal bonding, x-ray diffraction, lattice vibrations and phonons, free and nearly-free electron models, energy bands of insulators, metals, and semiconductors.

### **PHYS 6620 - Device Physics and Microfabrication**

**Credit Hours:** (3) **Description** Semiconductor devices and microfabrication; crystal properties and growth of semiconductors, energy bands and charge carriers, p-n junction, field-effect transistors, bipolar transistors, optoelectronic devices, power devices, power devices, and fundamentals of microfabrication, including vacuum technology and thin film deposition techniques.

**PREREQUISITE(S):** Permission of the Coordinator of Graduate Studies.

### **PHYS 6720 - Materials Physics**

**Credit Hours:** (3) **Description** Basic concepts in materials science emphasizing relationships between microscopic structure and properties; crystallography and symmetries, thermodynamics of material, phase equilibria, structure of ceramics and polymers, mechanical properties of material, kinetics of phase transformations in materials.

**PREREQUISITE(S):** Permission of the Coordinator of Graduate Studies

### **PHYS 6820 - Materials Physics Laboratory**

**Credit Hours:** (3) **Description** Synthesis of various materials and characterizations of their structure and properties using a variety of experimental tools; relationships between structure of materials and their properties are emphasized.

### **PHYS 7050-7059 - Special Topics in Advanced Physics**

**Credit Hours:** (3-6) **Description** Selected topics in advanced physics. Topics are varied and announced in online class listings.

### **PHYS 7060 - Individual Study in Advanced Physics**

**Credit Hours:** (1-3) **Description** Independent investigation of an area of advanced physics under supervision of a Physics faculty member. Written report required. May be repeated for a maximum of 6 hours credit.

### **PHYS 7061 - Physics Internship**

**Credit Hours:** 1-3 **Description** Practical experience in applying physics knowledge, technique, or skills in industrial,

research, educational, or government organizations. Permission from the department is required. Schedule to be negotiated between the internship sponsor, the student, and the faculty advisor. The course may be repeated as necessary or as required by the internship requirements. up to 12 hours.

### PHYS 7080 - Teaching Skills for Graduate Assistants

**Credit Hours:** (3) **Description** Overview of teaching techniques and classroom management for physics laboratory instructors; includes practical demonstrations in laboratory physics. May be repeated for a maximum of 12 credit hours. **NOTE:** Physics majors may not use this course to fulfill degree requirements.

### PHYS 7090 - Professional Development Workshop

**Credit Hours:** (3) **Description** Presentations by Physics faculty and students on current research topic; oral presentation required based on research performed under the supervision of a faculty member. S/U/IP

### PHYS 7100 - Classical Mechanics

**Credit Hours:** (3) **Description** Variational principles, Lagrangians and Hamiltonians, Poisson brackets, canonical transformations, Hamilton-Jacobi theory, and chaos in Hamiltonian systems. **PREREQUISITE(S):** PHYS 3111

### PHYS 7200 - Quantum Mechanics I

**Credit Hours:** (3) **Description** Dirac's bra-ket formalism, perturbation theory, spin, multiparticle systems, second quantization, Feynman's path integral formulation, quantum information, relativistic quantum mechanics, interpretation of quantum mechanics. **PREREQUISITE(S):** PHYS 4410/PHYS 6410 or equivalent.

### PHYS 7201 - Quantum Mechanics II

**Credit Hours:** (3) **Description** Scattering theory, open quantum systems, many-body theory, symmetry in quantum mechanics, topology in quantum mechanics, quantum hydrodynamics. **PREREQUISITE(S):** PHYS 7200

### PHYS 7300 - Electrodynamics

**Credit Hours:** (3) **Description** Electrostatics, multipole expansion, magnetostatics, electrodynamics, electromagnetics waves. May be repeated for a maximum of 12 credit hours **PREREQUISITE(S):** PHYS 3211

### PHYS 7375 - Methods of Mathematical Physics

**Credit Hours:** (3) **Description** (Same as MATH 7375). Finite dimensional vector spaces, matrices, tensors, vector fields, function spaces, differential and integral operators, transform theory, partial differential equations. **PREREQUISITE(S):** permission of instructor.

### PHYS 7376 - Methods of Mathematical Physics II

**Credit Hours:** (3) **Description** (Same as MATH 7376, ESCI 7376). Continuation of PHYS 7375. Complex variable theory, asymptotic expansions, special functions, calculus of variations, additional topics on matrices and operators, topics in non-linear analysis. **PREREQUISITE(S):** Permission of instructor

### PHYS 7385 - Methods in Computational Physics

**Credit Hours:** (3) **Description** Solution of problems in macroscopic and atomic-level problems in physics by numerical analysis and computer simulation, with emphasis on the accuracy and efficiency of large-scale computations and the physical interpretation of results.

### PHYS 7386 - Methods of Theoretical Physics

**Credit Hours:** (3) **Description** Complex analysis, Fourier series, Fourier and Laplace transforms, ordinary differential equations, partial differential equations, special functions.

### PHYS 7390 - Polymer Physics

**Credit Hours:** (3) **Description** Introduction to polymers, phase, behavior and dynamics. These include single polymer chain conformations, dilute and semi-dilute polymer solutions, polyelectrolyte solutions, effect of confinement, polymer blends, diblock copolymers, and kinetics of polymers in dilute and concentrated polymer solutions.

### PHYS 7520 - Statistical Mechanics

**Credit Hours:** (3) **Description** Microcanonical, canonical and grand-canonical ensembles, ideal gases, weakly-interacting systems, quantum statistics, applications to polyatomic gases, phonons and black body radiation.

### PHYS 7710 - Advanced Topics in Spectroscopy

**Credit Hours:** (3) **Description** Advanced topics in atomic and molecular spectroscopy, including the interaction of radiation with matter, transition probabilities, hyperfine structure, applications of group theory to spectroscopic problems. **PREREQUISITE(S):** permission of instructor.

### PHYS 7995 - Seminar

**Credit Hours:** (1-3) **Description** Students enrolled in this course are required to attend all weekly seminars in the Physics department, and submit weekly short reports on the seminar attended. Open only to Physics majors. Grades of S, U, and IP will be given.

### PHYS 7996 - Thesis

**Credit Hours:** (1-6) **Description** Research contributing to the development of the MS thesis. Only 6 semester hours may be counted toward degree requirements. Grades of S, U, or IP will be given.

### PHYS 8050 - Advanced Methods in Astrophysics

**Credit Hours:** 3 **Description** This is a course intended to introduce students to the predicted properties of black holes and the astronomical evidence for their existence. Along the way we will study modern ideas about the nature of space, time, gravity and the evolution of galaxies. Standard Letter

### PHYS 8100 - Classical Mechanics

**Credit Hours:** (3) **Description** Variational principles, Lagrangians and Hamiltonians, Poisson brackets, canonical transformations, Hamilton-Jacobi theory, and chaos in Hamiltonian systems. May be repeated for a total of 12 credits

### PHYS 8200 - Quantum Mechanics I

**Credit Hours:** (3) **Description** Fundamentals of Hilbert Space, simple quantum systems and relations to classical mechanics, symmetry in quantum mechanics, interaction with

electromagnetic fields, introduction to perturbation methods and scattering theory. May be repeated for a maximum of 9 credits

### PHYS 8201 - Quantum Mechanics II

**Credit Hours:** (3) **Description** Continuation of PHYS 7200; scattering theory, quantum dynamics, spin, and perturbation methods. May be repeated for a maximum of 12 credits

### PHYS 8300 - Electrodynamics

**Credit Hours:** (3) **Description** Electrostatics, multipole expansion, magnetostatics, electrodynamics, electromagnetic waves.

### PHYS 8385 - Methods in Computational Physics

**Credit Hours:** (3) **Description** Solution of problems in macroscopic and atomic-level problems in physics by numerical analysis and computer simulation, with emphasis on the accuracy and efficiency of large-scale computations and the physical interpretation of results.

### PHYS 8386 - Methods of Theoretical Physics

**Credit Hours:** (3) **Description** Complex analysis, Fourier series, Fourier and Laplace transforms, ordinary differential equations, partial differential equations, special functions.

### PHYS 8520 - Statistical Mechanics

**Credit Hours:** (3) **Description** Microcanonical, canonical and grand-canonical ensembles, ideal gases, weakly-interacting systems, quantum statistics, applications to polyatomic gases, phonons and black body radiation. May be repeated for a maximum of 6 credits **PREREQUISITE(S):** PHYS 4510.

### PHYS 8610 - Advanced Device Physics

**Credit Hours:** 3 **Description** This is an advanced course in solid state and device physics. This is primarily for doctoral students pursuing a degree in applied physics in the area of solid state materials. The topics in this course will bring the students to the research in solid state devices. The students are expected to learn the physics principles and theoretical methods of advanced solid state materials and devices.

**PREREQUISITE(S):** PHYS 6610.

## PHYS 9000 - Dissertation

**Credit Hours:** (1-18) **Description** Independent research for the PhD degree. May be repeated for a maximum 18 credit hours beyond Masters degree. Grades of S, U, or IP will be given.

## Political Science

### POLS 6101 - Political Statistics

**Credit Hours:** (3) **Description** (Same as PADM 6101). Introduction to analysis of quantitative data used to test, statistically, hypotheses in fields of political science and public and health administration. May be repeated for a maximum of 9 credits **PREREQUISITE(S):** PADM 7601 or permission of instructor.

### POLS 6200 - Envrnmntl Law/Polcy/Reg

**Credit Hours:** (3) **Description** Survey of the principal federal laws, policies, and regulations concerning environmental use and protection. **PREREQUISITE(S):** PADM 7600 or permission of instructor.

### POLS 6211 - Const Law Natl Power

**Credit Hours:** (3) **Description** An analysis of the relationships and controls of the three branches and the nature of the division of power between the nation and the states, with emphasis on the role of the Supreme Court as the arbiter in the constitutional system. May be repeated for a maximum of 12 credit hours

### POLS 6212 - Const Law Civil Liberty

**Credit Hours:** (3) **Description** Background, role, and legitimate extent of civil rights and liberties in US. **PREREQUISITE(S):** PADM 7600 and PADM 7605, or permission of graduate coordinator.

### POLS 6222 - Urban Politics

**Credit Hours:** (3) **Description** Roles and processes of politics and governance in urban America in context of global, social, and economic influences on cities and suburbs.

### POLS 6223 - Issues/Urban Politics

**Credit Hours:** (3) **Description** Selected issues in contemporary urban politics and policy. **PREREQUISITE(S):** PADM 7641 or permission of instructor.

### POLS 6230 - Legislative Interns

**Credit Hours:** (3-12) **Description** Supervised internship working with the Tennessee General Assembly or other legislative bodies on current legislative programs. Seminar sessions are held to discuss and analyze the problems with which the interns are working. May be repeated for a total of 12 credits. **PREREQUISITE(S):** PADM 7641.

### POLS 6315 - Revolution/Pol Violence

**Credit Hours:** (3) **Description** Comparative analysis of the forms and causes of political violence within nations, including revolutions, ethnic conflict and secessionist movements, and terrorism. **PREREQUISITE(S):** Completion of 21 hours in PADM program, including PADM 7600 and PADM 7601, and permission of instructor. Grades of A-F will be given.

### POLS 6317 - Democratic Transitions

**Credit Hours:** (3) **Description** Comparison of the transition from authoritarian rule to democracy in Latin America, Asia, Africa, and Eastern Europe, including consideration of the institutional design of democracy and the impact of culture on democratic transition and consolidation. **PREREQUISITE(S):** PADM 7600, PADM 7601, PADM 7213, or permission of instructor.

### POLS 6405 - Origin/Dev Am Pol Thght

**Credit Hours:** (3) **Description** Origin and development of political thought in the United States from the colonial to the present time, with emphasis placed on the relation between political thought and political institutions and practices. **PREREQUISITE(S):** Permission of instructor.

### POLS 6504 - International Law

**Credit Hours:** (3) **Description** An analysis of the nature, scope, duties, rights, and evolutionary trends of international law. Grades of S, U, or I will be given.

### POLS 6508 - Theories Intl Relations



**Credit Hours:** (3) **Description** Theoretical approaches to study of international politics. Consideration of various schools of thought, methods, and substantive literatures.

### **POLS 6510 - Politics Global Econ**

**Credit Hours:** (3) **Description** Consideration of manner in which political processes affect and are affected by economic processes at global level.

### **POLS 6511 - International Conflict**

**Credit Hours:** (3) **Description** Sources of conflict between nations, including characteristics of the international system, national attributes, and decision making.

### **POLS 6512 - Global Environmental Politics**

**Credit Hours:** (3) **Description** Exploration of major issues and topics of politics of global environment, including governing the global environment, multilateral agreements, issues of sustainability, and environmental justice. May be repeated for a maximum of 12 hours applied toward the degree

### **POLS 6710-6719 - Special Topics in Political Science**

**Credit Hours:** (1-3) May be repeated for a maximum of 9 credits

### **POLS 7100 - Sem Scope/Meth Pol Sci**

**Credit Hours:** (3) **Description** Survey of major theoretical approaches to study of politics with emphasis on both analytic and empirical aspects of political inquiry.

### **POLS 7101 - Political Statistics**

**Credit Hours:** (3) **Description** Introduction to descriptive and inferential analysis of quantitative political science data. Grades of S, U, or I will be given.

### **POLS 7201 - Seminar/Amer Politics**

**Credit Hours:** (3) **Description** Selected topics in American government and politics. May be repeated for a maximum of 6 credit hours.

### **POLS 7202 - Seminar US Government**

**Credit Hours:** (2-3) **Description** Analysis of the principle institutions of United States government, including at the local, state, and federal levels.

### **POLS 7203 - Seminar in Public Policymaking**

**Credit Hours:** (3) **Description** This course is designed to focus on the process of evidence-based policymaking. Policymaking is a critical component of government, and relies on the horizontal and vertical flow of ideas and opinions. This course will examine the input and output of policymaking mechanisms by exploring cornerstone topics like issue-framing, what evidence is **PREREQUISITE(S):** PUBH 7160/PUBH 8160 OR PERMISSION OF INSTRUCTOR.

### **POLS 7204 - Representation in American Pol**

**Credit Hours:** (3) **Description** This course provides a broad overview of the scholarship on representation. The course will examine how well the American public is represented, what it means to be represented, whether the public is capable of ensuring it is represented, and the effectiveness of American government institutions in achieving representation. The course is designed to be a collaborative enterprise in which we, as a class, evaluate the health of representative democracy in America and consider how we might do better.

### **POLS 7205 - Public Opinion & Pol Behavior**

**Credit Hours:** (3) **Description** This course provides a broad overview of the scholarship on public opinion and political behavior in American politics. The course examines what is reasonable to expect from citizens, how people use information, and what motivates them to form opinions and take political action. The hope is that, with this knowledge, we may craft more effective government institutions.

### **POLS 7302 - Sem Comp Politics**

**Credit Hours:** (3) *Cross listing* (Same as COMP 7780-COMP 8780) **Description** Selected topics in comparative politics. May be repeated for a maximum of 6 credit hours.

### **POLS 7303 - Sem Political Devlpmnt**

**Credit Hours:** (3) **Description** Comparative study of the process of political change in the global South. **PREREQUISITE(S):** PUBH 7150 AND PUBH 7160, OR PERMISSION OF INSTRUCTOR.

### **POLS 7304 - Seminar/Human Rights**

**Credit Hours:** (3) **Description** Focuses on improving government respect for human rights through an understanding of national and international institutions, interactions, norms, and actors; emphasizes conceptualizations and measurements of government respect for particular human rights used by this general research program.

### **POLS 7317 - Democratization**

**Credit Hours:** (3) **Description** This course is designed to focus on the theory and practice of democracy and democratization. It will help students understand the conceptual, theoretical, and empirical foundations of democratization; develop a foundation of fundamental knowledge about the nature of democracy promotion in theory and practice; and incorporate quantitative and qualitative methods in professional life and thinking.

### **POLS 7401 - Sem Political Theory**

**Credit Hours:** (3) **Description** Contribution of political philosophy to full understanding of politics is illustrated through selected topics.

### **POLS 7402 - Topics in Political Thought**

**Credit Hours:** (3) **Description** Selected topics within political theory. May be repeated a maximum of 6 hours.

### **POLS 7501 - Sem Interntl Relations**

**Credit Hours:** (3) **Description** Selected topics in international politics and foreign policy. May be repeated for a maximum of 6 credit hours.

### **POLS 7502 - Sem Intl Confl/Security**

**Credit Hours:** (3) *Cross listing* (same as PUBH 7305-PUBH 8305) **Description** Exploration of major issues and topics of international security studies; forms of conflict and diplomacy; proliferations of weapons; and insecurity for human beings across the international system

### **POLS 7504 - Sem Gov Western Europe**

**Credit Hours:** (2-3) **Description** Politics and policies of Western Europe, with emphasis on the nations of Britain, France, and Germany and integration processes occurring within the European Community.

### **POLS 7505 - Sem Latin Amer Politics**

**Credit Hours:** (2-3) **Description** Developmental challenges that confront Latin American nations, configurations of political institutions with which those nations address those challenges, and changing patterns of state-society relationships that result from the politics of development in Latin America. Grades of S, U, or I will be given.

### **POLS 7506 - Foreign Policy**

**Credit Hours:** (3) **Description** Analysis of the conduct and formulation of foreign policy.

### **POLS 7508 - Interntl Reltns Theory**

**Credit Hours:** (3) **Description** A survey of the main theoretical approaches within the field of international relations.

### **POLS 7510 - Politics Global Economy**

**Credit Hours:** (3) **Description** Analysis of the interactive relationship between global political and economic processes.

### **POLS 7512 - Politics of Environment Change**

**Credit Hours:** (3) **Description** This seminar introduces students to the political challenges that accompany global environmental change. The central premise of this course is that deciding how to respond to environmental issues is a highly political process involving conflicts over competing values and interests. These conflicts and the subsequent outcomes are shaped by a variety of factors which will be explored in this seminar.

### **POLS 7702 - Ind Study Pol Sci**

**Credit Hours:** (1-3) **Description** May be repeated for a maximum of six hours. Independent investigation of research problems or directed readings in selected area of political science.

## **POLS 7710-7719 - Special Topics in Political Science**

**Credit Hours:** (1-3) May be repeated for a maximum of 3 credits

## **POLS 7996 - Thesis**

**Credit Hours:** (1-6) **Description** The student must write and defend satisfactorily a thesis on a subject approved by the major professor. Grades of S, U, or IP will be given.

## **POLS 8201 - Seminar/Amer Politics**

**Credit Hours:** (3) **Description** Selected topics in American government and politics. May be repeated for a maximum of 6 credit hours.

## **POLS 8302 - Sem Comp Politics**

**Credit Hours:** (3) **Description** Selected topics in comparative politics. May be repeated for a maximum of 6 credit hours.

## **POLS 8501 - Sem Interntl Relations**

**Credit Hours:** (3) **Description** Selected topics in international politics and foreign policy. May be repeated for a maximum of 6 credit hours. COREQUISITE(S): SWRK 3920.

## **POLS 8702 - Ind Study Pol Sci**

**Credit Hours:** (1-3) **Description** May be repeated for a maximum of six hours. Independent investigation of research problems or directed readings in selected area of political science. COREQUISITE(S): SWRK 3903.

## **POLS 8710-8719 - Special Topics in Political Science**

**Credit Hours:** (1-3) May be repeated for a maximum of 3 credits

## **Portuguese**

## **PORT 6024 - Brazilian Short Story**

**Credit Hours:** (3) **Description** Accelerated introduction to Portuguese for graduate students with a solid command of Spanish; provides an introduction to Brazilian contemporary

literature and focuses on Portuguese grammar, emphasizing the differences between Spanish and Portuguese. This course fulfills the language reading knowledge requirement.

## **Professional Studies**

### **PRST 7040 - Human Resources Mgmt \*\***

**Credit Hours:** (3) **Description** This course emphasizes the development of skills for dealing with selected aspects of human resource management. It aims to enhance the students' ability to apply theoretical concepts and alternative approaches for dealing with common issues concerning the human side of the enterprise. The course is geared to serve the needs of line and staff administrators in supervisory positions.

### **PRST 7100 - Prof Environ/Issue/Ethic \*\***

**Credit Hours:** (3) **Description** Classical approaches to ethics presented with their application to decision points confronted in various professions, as well as analysis of issues of diversity and moral responsibility in professional practice.

### **PRST 7105 - Project Planning & Scheduling \*\***

**Credit Hours:** (3) **Description** Contemporary methods used in project planning and scheduling; emphasis on critical path method (CPM) with computer application; solution of actual problems stressed.

### **PRST 7200 - Globalization/Profnsns \*\***

**Credit Hours:** (3) **Description** Analysis of globalization and its effects on the workplace, including the interactions of advancing communications technology, multi-national corporations, and global societies.

### **PRST 7300 - Research Methods \*\***

**Credit Hours:** (3) **Description** The study and application of research methods appropriate to professional studies.

### **PRST 7310 - Leadership/Organization \*\***

**Credit Hours:** (3) **Description** Organizational leadership is a course designed to inform the individual about the structure and behavior of actors at all levels of the organization.

### **PRST 7400 - Instr Dsgn Train/Develpmt \*\***

**Credit Hours:** (3) **Description** Organizational leadership is a course designed to inform the individual about the structure and behavior of actors at all levels of the organization.

### **PRST 7410 - Evaluation of Learning \*\***

**Credit Hours:** (3) **Description** Evaluation of Learning, covers the concepts and skills used in evaluation models, theories, and best practices.

### **PRST 7420 - Org Needs Assessment \*\***

**Credit Hours:** (3) **Description** The purpose of this course is to provide an overview of the processes and techniques used to conduct an organizational analysis and then identify training needs in private and public organizations. Grades of A-F will be given.

### **PRST 7430 - Adv Instr Desgn/Train&Devel \*\***

**Credit Hours:** (3) **Description** This course builds on basic instructional design theory and enhances it with considerations necessary to build and deliver instructionally sound training materials across multiple media, focusing on electronic media delivery systems. This course will include an in-depth look at media selection strategies, interface design considerations, and instructional strategies for developing online training.

### **PRST 7440 - Engage the Adult Online Learnr \*\***

**Credit Hours:** (3) **Description** This course specifically addresses web-based learning environments with a particular focus on student engagement and interaction. Developing alternative means of training employees has become of greater interest to employers recently, and e-training can give employers a mechanism for cutting costs, an alternative method for delivering training at any time and any place, a means for remediation of employee training, and an opportunity for employees to develop learning communities. Grades of S, U, or I will be given.

### **PRST 7450 - Computer-Based Instruction \*\***

**Credit Hours:** (3) **Description** Students will study leadership from a historical and contemporary perspective. They will identify, apply, and reflect on aspects of leadership development, including concepts of personal change toward effective leadership in a changing environment. Topics cover historical development of leadership theories, personal

assessment and development, values and ethics, motivation, power, followership, group dynamics, diversity in leadership, controversy with civility, change process, and citizenship. Grades of S, U, or I will be given.

### **PRST 7470 - Facilitation of Learning \*\***

**Credit Hours:** (3) **Description** Prepares trainers to design and facilitate programs that work effectively and efficiently with adult learners; provides necessary theory and experience to ensure competent facilitation of learning; students plan and conduct training sessions and receive feedback.

### **PRST 7500 - Foundation/Leadership \*\***

**Credit Hours:** (3) **Description** Students will study leadership from a historical and contemporary perspective. They will identify, apply, and reflect on aspects of leadership development, including concepts of personal change toward effective leadership in a changing environment. Topics cover historical development of leadership theories, personal assessment and development, values and ethics, motivation, power, followership, group dynamics, diversity in leadership, controversy with civility, change process, and citizenship.

### **PRST 7600 - Statistical Analysis \*\***

**Credit Hours:** (3) **Description** The purpose of this course is to provide students with an introductory survey of the many applications of descriptive and inferential statistics. Grades of S, U, or I will be given.

### **PRST 7700 - Conflict Mgmt/Negotiatn \*\***

**Credit Hours:** (3) **Description** Negotiation and Conflict Management presents negotiation theory " strategies and styles " within an employment context. May be repeated for maximum of 20 credits with change in topic

### **PRST 7770 - Comp Based Decsn Model \*\***

**Credit Hours:** (3) **Description** Modeling and analyzing managerial problems on spreadsheets. Working knowledge of Excel will be assumed so that we can focus on the modeling aspects. The spreadsheet modeling experience in this course will enhance not only analytical problem solving capabilities but also spreadsheet skills of even an experienced Excel user.

### **PRST 7800 - Organizational Change Skills \*\***

**Credit Hours:** (3) **Description** This course examines concepts and techniques of organization development (OD) and the leadership skills required for organizational change. Based on behavioral science knowledge and methods, OD interventions facilitate planned organizational change and renewal. May be repeated for maximum of 24 hours credit

### **PRST 7910 - Employment & HR Law \*\***

**Credit Hours:** (3) **Description** This course provides an overview of legal issues affecting the administration of employment issues, human resource management and leadership. The course focuses on policies and laws that impact human resource decisions in organizations. Prerequisite PRST 7040.

### **PRST 7920 - Diversity in the Workplace \*\***

**Credit Hours:** (3) **Description** Examines processes and techniques to conduct an organizational analysis and identify training needs in an organizational environment, with emphasis on how language, gender, race, tradition, education, economic structure, and organizational philosophy interact.

### **PRST 7930 - Compensation and Benefits \*\***

**Credit Hours:** (3) **Description** The focus of this course is on management tools designed to ensure that the right people get the right pay for achieving organizational objectives in the right way.

### **PRST 7940 - Recruitment, Selection, Retention \*\***

**Credit Hours:** (3) **Description** 3

### **PRST 7998 - Professional Project \*\***

**Credit Hours:** (3) **Description** Supervised research that serves as the integrative culmination for the Master of Professional Studies student. A-F, IP

## **Psychology**

### **PSYC 6513 - Psychology of Grief/Loss**

**Credit Hours:** (3) **Description** Impact of bereavement from both natural and violent deaths, as well as the loss of children, parents, partners and significant others.

### **PSYC 7000 - History/System Psyc**

**Credit Hours:** (1) Former: 7000 **Description** Seminar of basic issues in contemporary psychology within their historical context with extensive examination of their implications for theoretical and professional applications. Permission of instructor required.

### **PSYC 7010-7029 - Special Topics in Psychology**

**Credit Hours:** (1-3) **Description** Topics are varied and announced in online class listings.

### **PSYC 7110 - Ethics And Psychology**

**Credit Hours:** (3) **Description** In-depth review of the ethical standards that impact work of psychologists in health services, consultation, teaching, and research settings; emphasizes ethical issues and dilemmas, mastery of ethical decision-making, understanding community standards for practice, and the interface between ethical guidelines and the law.

### **PSYC 7203 - Behavior Analysis**

**Credit Hours:** (3) **Description** A comprehensive treatment of behavioral principles in their application to simple and complex forms of behavior. The course focuses on operant conditioning of animal behavior and demonstrates the basic behavioral principles at work in their simplest form. These operant conditioning principles are extended to human behavior occurring in the natural environment. Increasingly complex human behaviors are successively introduced.

### **PSYC 7207 - Developmental Psyc**

**Credit Hours:** (3) **Description** Focuses on theories, issues, and research related to biological, cognitive, and social development from infancy through adulthood. It promotes understanding of different perspectives on lifespan development by addressing three questions: (1) What changes?, (2) How does it change?, and (3) When does it change?

### **PSYC 7208 - Psyc Of Perception**

**Credit Hours:** (3) **Description** An examination of the historical development, research, and major theoretical positions in the area of perceptual psychology. Major emphasis is placed on theoretical and experimental treatment of the basic perceptual phenomena.

## PSYC 7211 - Cognitive Processes

**Credit Hours:** (3) **Description** Overview of cognitive psychology and cognitive science, with emphasis on theoretical explanations and critical evaluation of empirical evidence; topics include perception and attention, short- and long-term memory, language, problem solving, reasoning, decision making, and artificial intelligence.

## PSYC 7212 - Industrial Psychology

**Credit Hours:** (3) **Description** Examination of the content and methodology used by industrial psychologists in personnel selection, classification, training, and performance evaluation. Students are familiarized with the skills necessary for these activities, as well as the guidelines and legal constraints on organizations' hiring, promotion, and performance evaluation practices.

## PSYC 7213 - Cognitive Science

**Credit Hours:** (3) **Description** Cognitive Science. Integrates bottom-up empirical research with top-down modeling to explain how information is processed in the brain at multiple levels, ranging from ion channels to neural circuits to behavior. Examples include basic neuroanatomy, neuroplasticity, motor control, perception, and higher-order cognition.

## PSYC 7214 - Industrial Training

**Credit Hours:** (3) **Description** Examination of the content and methodology used by industrial psychologists to develop, implement, and evaluate training programs in work settings. Students acquire the skills to conduct training needs assessments, select from various training platforms, develop training programs, and assess the degree to which they accomplish their organizational objectives. The course includes exposure to new computer-based and web-based training technologies.

## PSYC 7215 - Organizational Psyc

**Credit Hours:** (3) **Description** The course deals with the major organizational determinants of individual and group behavior and performance. The characteristics of organization structure and climate are explored from both a classical and a contemporary viewpoint. Organization change and development theories are examined plus the major ancillary theoretical positions on leadership, individual and group

performance, behavior modification, selection and training.  
**PREREQUISITE(S):** Permission of instructor.

## PSYC 7217 - Social Psychology

**Credit Hours:** (3) **Description** Review of theoretical and empirical literature examining behavior and experience of individuals in social settings; includes coverage of attributions and interpersonal perception, attitude formation and change, prejudice and stereotyping, interpersonal attraction, social influence, human aggression, and prosocial behavior.

## PSYC 7218 - Incr Orgnl Productivity

**Credit Hours:** (3) **Description** Examination of the theories and methodologies used to diagnose organization problems, determine their causes, and select, implement, and evaluate interventions to mitigate the problems and increase organizational productivity. Students acquire a knowledge base and specific skills employed by organizational psychologists to help effect organizational improvements. The course involves lecture, discussion, and group projects.

## PSYC 7219 - Soc/Persnlty Devel

**Credit Hours:** (3) **Description** A general survey of social and personality development from infancy through adolescence. The course consists of three sections: (1) general theoretical perspectives, including intrapsychic, cognitive, and social learning approaches; (2) intra-individual phenomena such as sex role, traits, moral development, etc.; (3) inter-individual phenomena such as family interactions, peer interactions, and societal influences.

## PSYC 7220 - Social Cognition

**Credit Hours:** (3) **Description** Review of major contemporary issues in social psychology from a social cognitive perspective; cognitive-information processing approach as it applies to social psychology; attributions, schemas, attention and perception, impression-formation and social memory, accessibility and priming, the self, and decision making.

## PSYC 7221 - Natural Lang Processng

**Credit Hours:** (3) *Cross listing* (Same as COMP 7780 - COMP 8780) **Description** Computational aspects, algorithms, and techniques for human language processing including lexical analysis, syntactic parsing, semantics, word sense disambiguation, logic forms, dialogue, and pragmatics;

applications include question answering and information extraction among others. **PREREQUISITE(S):** COMP 6040 or COMP 6041 or permission of instructor.

### PSYC 7222 - Psychology Human Memory

**Credit Hours:** (3) **Description** Major theoretical and empirical issues in the study of human memory; major emphasis on nature of structures and processes involved in memory encoding and retrieval and nature of representations available to memory.

### PSYC 7223 - Intelligent Tutoring

**Credit Hours:** (3) **Description** Covers selected internet-based training systems and their links to cognition, education, and computing; focuses on learning environments, including basic theories in learning science, advanced learning technologies, software development, and applications in academic settings.

### PSYC 7301 - Research Design & Meth

**Credit Hours:** (3) **Description** Emphasis on mathematical and nonmathematical analyses of psychological data, theoretical and experimental implications of different analyses, various data collection techniques, and types of experimental and statistical control; ethical issues and ethical principles of research conduct. **PREREQUISITE(S):** Psychology graduate student or permission of instructor

### PSYC 7302 - Adv Statistics Psych I

**Credit Hours:** (3) **Description** Introduction to general linear model; multiple regression analysis, and single- and multiple-factor analysis of variance; emphasis on using software programs to perform statistical analyses.

**PREREQUISITE(S):** Psychology graduate student or permission of instructor.

### PSYC 7303 - Adv Statistics Psych II

**Credit Hours:** (3) **Description** Intermediate and advanced topics related to analysis of variance, including fixed and random effects, repeated measures, non-orthogonal designs, and the analysis of covariance; traditional analysis of variance concerns within framework of general linear model; scales of measurement, planned and post hoc comparisons, power analysis and concept of effect size. **PREREQUISITE(S):** PSYC 7302 or equivalent.

### PSYC 7304 - Meas Th & Psychomet

**Credit Hours:** (3) **Description** Measurement theory and psycho-metrics involved in the construction and evaluation of psychological measurement instruments will be stressed. Particular emphasis will be placed on theory and techniques of psychological measurement, scale and inventory construction, reliability, validity, evaluation of measurement quality, classical and contemporary measurement theory, and standardization. Restricted by program or permit. **PREREQUISITE(S):** PSYC 7301 and PSYC 7302 or equivalents.

### PSYC 7305 - Quant Meth Review Rsch

**Credit Hours:** (3) *Cross listing* (same as PUBH 7305-PUBH 8305) **Description** (same as PUBH 7305-8305). Quantitative procedures (meta-analysis) for reviewing research findings in psychology and other social sciences; techniques for locating and coding research studies, calculating effect sizes, and analyzing study findings. **PREREQUISITE(S):** Psychology graduate student or permission of instructor.

### PSYC 7306 - Linear Struct Modeling

**Credit Hours:** (3) **Description** An applied introduction to cross sectional and longitudinal structural equation modeling with single or multiple groups, including: path analysis, confirmatory factor analysis, measurement invariance, mediation, moderation, mixture modeling, latent growth curves, exploratory structural equation modeling and other latent variable models which include applications to experimental and non-experimental data.

**PREREQUISITE(S):** PSYC 7301 and PSYC 7302 or equivalents.

### PSYC 7307 - Models Program Eval

**Credit Hours:** (3) **Description** History and nature of program evaluation, review of different approaches taken to evaluation by variety of major theorists in the field; practice in evaluation.

### PSYC 7308 - Appl Multivariate Stat

**Credit Hours:** (3) **Description** Multivariate analysis of variance (MANOVA) with independent designs and its extension to repeated measures ANOVA. Goals include review conceptual bases, learn SPSS procedures, analyze simple and complex designs, and learn special post hoc procedures. **PREREQUISITE(S):** PSYC 7302 or equivalent.

### PSYC 7309 - Focus Group Research

**Credit Hours:** (3) **Description** Examination of the general logic of focus group research, including strengths and weaknesses of this approach. Methodology will be covered in depth, including how to plan a project, development of questions for a focus group, moderating the group, and analyzing and reporting data. Completion of a semester project is required.

### PSYC 7310 - Mixed-Model Regress Anly

**Credit Hours:** (3) **Description** Instruction in the use of mixed-model regression with a focus on design and analysis of group-randomized trials; attention also given to analysis of data from surveys based on cluster sampling, longitudinal studies, and studies involving matching.

**PREREQUISITE(S):** PSYC 7301 and PSYC 7302 or equivalents.

### PSYC 7311 - Appl Cat Data Analysis

**Credit Hours:** (3) **Description** Instruction includes tabular, logistic, and Poisson and Cox regression, as well as interpretation of SAS output. For advanced students in psychology, education, and public health pursuing a career in research. **PREREQUISITE(S):** PSYC 7301 and PSYC 7302 or equivalents

### PSYC 7312 - Qualitative Resrch/Psyc

**Credit Hours:** (3) **Description** Examines history and current practice of research stemming from a human science philosophy, introducing a variety of qualitative research methodologies; examines differences and similarities in human and natural sciences in order to appreciate the significance of epistemology on research practice. **PREREQUISITE/COREQUISITE:** PSYC 7301 or permission of instructor. **PREREQUISITE(S) or COREQUISITE(S):** PSYC 7301 or permission of instructor.

### PSYC 7313 - Computational Models Cog Sci

**Credit Hours:** (3) **Description** A survey of popular techniques used to model mental processes and experimental data. Both computational and mathematical models will be considered. Examples include: artificial neural networks for psycholinguistics, Bayesian methods for learning and categorization, general processing tree models for reaction time studies, diffusion and random walk processes of memory, and knowledge representation. The seminar will focus on conceptual issues while providing a brief mathematical

introduction to the models for a general behavioral science audience.

### PSYC 7314 - Programming Computation in Psych

**Credit Hours:** (3) Former: (PSYC 7503) Restricted to Program or by Permit.

### PSYC 7315 - Randomized Clinical Trials

**Credit Hours:** (3) **Description** The purpose of this course is to provide students with a thorough grounding in planning and executing randomized clinical trials (RCTs) including design, management, evaluation, and resource acquisition.

**PREREQUISITE(S):** PSYC 7301 and PSYC 7302. Restricted by Program or by Permit.

### PSYC 7407 - Cognition & Emotion

**Credit Hours:** (3) **Description** Cognition and emotion affect behavior in a myriad of ways. The interactions of cognition and emotion are also quite complex. The primary purpose of this course is to provide an overview of research on the cognitive and affective bases of behavior. The course is also designed to foster critical thinking and presentation skills.

### PSYC 7411 - Psyc Process Research

**Credit Hours:** (3) **Description** Investigates current practice of examining effects of interventions within sessions, of therapy events, and of differences in psychotherapy orientations. Through examining mock therapy transcripts and interviews, students build skills toward independent implementation of psychotherapy or interview-related research. **PREREQUISITE(S):** PSYC 7301 and PSYC 7434, or permission of instructor.

### PSYC 7412 - Psychopathology

**Credit Hours:** (3) **Description** Survey of the manifestations of abnormal behavior and psychological processes; detailed analysis of clinical and experimental literature concerning psychological and psychiatric disorders and their etiology. Historical principles are emphasized. Restricted by Program or by Permit.

### PSYC 7416 - Child Psychopathology



**Credit Hours:** (3) **Description** A survey of the major theoretical formulations of childhood disorders, including learning, developmental, psychoanalytic, and family systems theories. Organic, familial, and sociocultural influences are discussed. Emphasis is placed on basic research that contributes to our understanding of these difficulties. Traditional approaches to intervention are reviewed along with family treatment.

### **PSYC 7419 - Family Therapy**

**Credit Hours:** (3) **Description** Overview of family therapy as treatment modality and point of view, emphasizing interdependence of theory, practice, and research; focuses on brief problem-focused therapy, behavioral couples and family therapy, multigenerational family systems therapy, strategic and structural approaches, systemic family therapy, experiential approaches, and narrative family therapy.  
**PREREQUISITE(S):** Permission of instructor.

### **PSYC 7420 - Personal Construct Thry**

**Credit Hours:** (3) **Description** In-depth seminar on personal construct theory, a cognitively oriented theory of personality stemming from the work of George Kelly. Philosophical assumptions and basic theory; use of repertory grid technique and its application to research on such topics as cognitive complexity, development, interpersonal relationships, psychopathology, and psychotherapy. Restricted by Program or by Permit.

### **PSYC 7428 - Foundatns Clinical Psych**

**Credit Hours:** (3) **Description** Introduction to fundamental concepts and methods of clinical psychology conceived as application of scientific reasoning to human problems; historical and scientific foundations for scientist-practitioner model, and various roles of clinical psychologist in social context; ethical, legal, and multi-cultural issues emphasized. Restricted by Program or by Permit.

### **PSYC 7430 - Clin Assessment/Ability**

**Credit Hours:** (3) **Description** Introduction to psychological assessment of cognitive abilities and achievement; exposure to basic psychometric concepts; observation and interpretation of assessment related to behavior; specific emphasis on development of assessment skills such as test administration, test interpretation, and report writing; ethical and legal issues of professional conduct emphasized. Restricted by Program or by Permit.

### **PSYC 7432 - Clinic Asses/Case Cncpt**

**Credit Hours:** (3) **Description** Comprehensive review of fundamental concepts and practices of clinical assessment as application of scientific reasoning to problem of case conceptualization; development of conceptualization skills to integrate interview, objective assessment, and systematic observations; evaluation of different assessment approaches for empirical support and utility in case management; critical and analytic thinking, ethical and legal issues of professional conduct emphasized. Restricted by Program or by Permit.

### **PSYC 7434 - Clin Psychotherapies**

**Credit Hours:** (3) **Description** In-depth study of methods of psychotherapy and intervention strategies, their basic assumptions, spheres of applicability, and typical outcomes. Therapeutic approach covered will depend upon the particular instructor. May be repeated for maximum of 20 credits with change in topic. May be repeated for maximum of 20 credits with change in topic. Restricted by Program or by Permit.

### **PSYC 7435 - Intro To Psychotherapy**

**Credit Hours:** (1-3) **Description** Required for all clinical students. Surveys major traditions of psychotherapy - psychodynamic, humanistic, cognitive-behavioral, and systemic - considering originators' works as well as contemporary exponents; includes didactic (reading, discussion) and experiential learning (exercises, role plays) to promote both conceptual and practical acquaintance with the implications of each tradition. Students can enroll in this course for 3 hours and then repeat once for 1 hour. Restricted by Program or by Permit.

### **PSYC 7438 - Pract Clinical Trtmt**

**Credit Hours:** (1-3) **Description** Practical experience to students in clinical psychology, permitting them to work under professional supervision for 42 client contact hours in the Psychological Services Center. Students conduct intake interviews, administer and interpret psychological tests, and provide therapy. May be repeated for maximum of 24 hours credit. Restricted by Program or by Permit. Grades of S, U, or IP will be given.

### **PSYC 7439 - Clin Assessmnt/Report Wrtnng**

**Credit Hours:** (3) **Description** Develops strong assessment skills and ability to write comprehensive mental health reports; students perform assessments and receive instruction

in the Psychological Services Center; instructor provides feedback on student's testing, analysis of tests, integration of tests into comprehensive understanding of client, and writing professional reports. Restricted by Program or by Permit.

**PREREQUISITE(S):** PSYC 7412/PSYC 8412, PSYC 7428/PSYC 8428, PSYC 7432/PSYC 8432, and PSYC 7621/PSYC 8621 Grades of S/U, or IP will be given

### **PSYC 7440 - Behavioral Medicine I**

**Credit Hours:** (3) **Description** Overview of behavioral medicine and examination of psychologists' roles in healthcare settings; psychological and interpersonal factors that affect healthcare delivery will be examined, such as physician-patient communication, gender, and ethnic diversity; differences in ethical underpinnings between medicine and psychology will be explored. Restricted by Program or by Permit.

### **PSYC 7441 - Psyc/Medical Illness**

**Credit Hours:** (3) **Description** Addresses application of psychological principles to promote coping with medical disability and optimal healing; diagnostic interviewing and medical consulting skills emphasized; psychological and cognitive impact on various medical diseases and disorders reviewed; biological bases of behavior emphasized. Restricted by Program or by Permit.

### **PSYC 7506 - Sem Clinical Psyc**

**Credit Hours:** (3)

### **PSYC 7507 - Sem Industrial Psyc**

**Credit Hours:** (3)

### **PSYC 7509 - Sem School Psychology**

**Credit Hours:** (3)

### **PSYC 7510 - Sem Organztnl Psyc**

**Credit Hours:** (3)

### **PSYC 7512 - Sem Develpmtal Psyc**

**Credit Hours:** (3)

### **PSYC 7514 - Sem Cognitive Science**

**Credit Hours:** (3) *Cross listing* (same as COMP 7514, PHIL 7514, AUSP 7514). **Description** Systematic study of current topics in Cognitive Science with an emphasis on its interdisciplinary nature. Topics will vary each semester. Repeatable up to 18 credit hours.

### **PSYC 7515 - Sem Social Psychology**

**Credit Hours:** (3)

### **PSYC 7516 - Issues Psychothrpy Rsch**

**Credit Hours:** (3) **Description** Research evidence pertaining to basic questions about psychotherapy and its effectiveness; classic contributions and current research findings.

### **PSYC 7517 - Grant Prop Writing/Psyc**

**Credit Hours:** (3) **Description** Introduction to grant-writing process with emphasis on NIH funding; topics include identifying funding sources, grant writing and resubmissions, and grant reviewing; students prepare a suitable grant application as part of the course.

### **PSYC 7520 - Tchng Skills Grad Asst**

**Credit Hours:** (3) **Description** Overview of teaching responsibilities and skills and discussion of teaching issues for graduate teaching assistants; supervised practical experience teaching college courses and feedback on performance. May be repeated for a maximum of 12 credit hours.

**PREREQUISITE(S):** Permission of graduate coordinator

### **PSYC 7521 - Teaching of Psychology**

**Credit Hours:** (3) Former: (PSYCH 7501) Restricted by Program or by Permit.

### **PSYC 7530 - Psychology of Language**

**Credit Hours:** 3 **Description** This course will cover major findings in psycholinguistics, a knowledge base of Linguistics, basics on conducting and designing experiments in language research, and current findings and theoretical debates. Standard Letter

### **PSYC 7601 - Res Prac Gen Psych**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given.

**PSYC 7602 - Res Prac Phys Psych**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given.

**PSYC 7603 - Res Prac Exp Psych**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given.

**PSYC 7604 - Res Prac Comp Psych**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given.

**PSYC 7605 - Res Prac Social Psych**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given.

**PSYC 7606 - Res Prac Clinical Psych**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given.

**PSYC 7607 - Res Prac Devlpmntl Psych**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given.

**PSYC 7608 - Res Prac Neuropsych**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given.

**PSYC 7609 - Res Prac School Psych**

**Credit Hours:** (1-3) **Description** Grades of A-F, or IP will be given.

**PSYC 7610 - Field Prac Clin Psych**

**Credit Hours:** (1-6) **Description** Supervised experience in the use of psychological diagnostic, treatment, or community intervention procedures in various community agencies and facilities. May be repeated for a total of 12 credits. Restricted by Program or by Permit. Grades of S, U, or IP will be given

**PSYC 7611 - Field Prac Soc-Indust**

**Credit Hours:** (1-3) **Description** Seminar discussion and supervised experience in the application of basic psychological procedures and principles to social, personnel, and organizational activities in various industrial, military and community settings. May be repeated for a maximum of 9 credits. Grades of S, U, or IP will be given.

**PSYC 7614 - Prac School Psych**

**Credit Hours:** (3) **Description** Supervised experience in the application of psychological procedures in educational and clinical settings. A minimum of two practica are required. First practicum requires grades of 3.0 or better in PSYC 7803 and PSYC 7804; second requires 3.0 or better in PSYC 7805 and PSYC 7806, and S in first practicum. May be repeated for a maximum of 12 credits. Restricted by Program or by Permit. Grades of S, U, or IP will be given.

**PSYC 7615 - Special Problems**

**Credit Hours:** (1-3) **Description** Independent investigation of a research problem, or directed readings, in a selected area of psychology chosen in consultation with the instructor. Only six hours credit may be applied to the degree. May be repeated for a maximum of 6 credits. Grades of A-F, or IP will be given

**PSYC 7616 - Clin Prac Neuropsych**

*Cross listing* The advanced student interested in neuropsychology will receive supervised experience in the use of psychodiagnostic techniques in various community settings; training covers basic diagnostic techniques, specialized diagnostic techniques, and neurological assessment procedures. May be repeated for a maximum of 9 credits. **PREREQUISITE(S):** PREREQUISITE: Permission of instructor. Grades of S, U, or IP will be given.

**PSYC 7618 - Res Prac Cogn Psych/Sci**

**Credit Hours:** (1-3) **Description** May be repeated for a maximum of 3 credits. Grades of S, U, or IP will be given. Department Permit Required.

**PSYC 7619 - Child/Family Practicum**

**Credit Hours:** (1-3) Restricted by Program or by Permit.

**PSYC 7619 - Child/Family Practicum**

**Credit Hours:** (1-3) **Description** May be repeated for a maximum of 9 credits. Grades of S, U, or IP will be given.

Restricted by Program or by Permit. Restricted by Program or by Permit

### **PSYC 7621 - Research Practicum**

**Credit Hours:** (3) **Description** This practicum is required of all first year doctoral students and others receiving department financial assistance and may be taken by General Psychology Masters students. This course serves to introduce the student to research currently being conducted by faculty in the Department of Psychology. Grades of S, U, or IP will be given. Restricted by Program or by Permit. Restricted by Program or by Permit

### **PSYC 7622 - Res Prac: Behav Med**

**Credit Hours:** (1-3) **Description** May be repeated for a maximum of 12 credit hours. Grades of S, U, or IP will be given. Restricted by Program or by Permit. Restricted by Program or by Permit.

### **PSYC 7701 - Behavioral Neuroscience**

**Credit Hours:** (3) **Description** A comprehensive study of the relationships between brain function and behavior; topics include neuroanatomy, neurophysiology, neuropharmacology, sensory systems, learning and memory, motor systems and disorders, and neuropsychiatric diseases.

### **PSYC 7705 - Neuropsychopharmacology**

**Credit Hours:** (3) **Description** Overview of basic principles of neuropharmacology and contemporary issues in clinical psychopharmacology; introduces principles of pharmacokinetics and dynamics, drug-receptor pharmacology, neuroanalytical methodology, and chemical neuroanatomy of the brain; culminates with overviews of contemporary drug treatment strategies for a range of cognitive, pathological, and neurological disorders, including substance abuse.

### **PSYC 7800 - Intro School Psychology**

**Credit Hours:** (3) **Description** Survey of school psychology including historical foundations, roles and functions, school and community practices, standards and ethics, issues, technological developments; trends in credentialing and practice at the state and national level.

### **PSYC 7802 - Child Disability/Family**

**Credit Hours:** (3) **Description** An overview of childhood disability and family considerations applied to psychological services in school and agency settings; agency and family visitations provide experiential learning in addition to theory and research. **PREREQUISITE(S):** Course on characteristics of exceptional children or permission of instructor.

### **PSYC 7803 - Psych Ed Assessmnt I**

**Credit Hours:** (3) **Description** Critical analysis of intellectual assessment including skill development in administration, scoring, and interpretation of major individual tests of intelligence; related psychoeducational instruments with emphasis on case study data collection and report writing. Restricted by Program or by Permit.

### **PSYC 7804 - Psych Ed Assessmnt II**

**Credit Hours:** (3) **Description** Critical analysis of personality assessment including skill development in administration, scoring, and interpretation of major personality assessment techniques; related psychoeducational instruments with emphasis on case study data collection and report writing. Restricted by Program or by Permit. **PREREQUISITE(S):** School psychology students must have a grade of 3.0 or higher in PSYC 7803.

### **PSYC 7805 - Psych Consultation**

**Credit Hours:** (3) **Description** This course teaches the theory and skills needed for providing consultation to students and families in educational and clinical settings; focusing on an ecological, problem-centered model, content will include factors influencing the consultation process at the individual, group, and system level. Restricted by Program or by Permit. **PREREQUISITE(S):** School psychology students must have a grade of 3.0 or higher in PSYC 7803 and PSYC 7804.

### **PSYC 7806 - Sch Psych Interventions**

**Credit Hours:** (3) **Description** Comprehensive review of psychosocial interventions for use with children, adolescents, and their families and educators; counseling theories; crisis response; dual emphasis on empirically-validated interventions and on the practical application of skills in educational and clinical settings. Restricted by Program or by Permit. **PREREQUISITE(S):** School Psychology students must have a grade of 3.0 or higher in PSYC 7803 and PSYC 7804.

### **PSYC 7807 - Academic Interventions**

**Credit Hours:** (3) **Description** Comprehensive review of evidenced-based academic interventions in the areas of reading, writing, and mathematics; theoretical foundations of literacy and mathematics; techniques to promote effective learning environments; collaboration with teachers and other educational professionals. Restricted by Program or by Permit.

### PSYC 7808 - Psychoed Assessmnt III

**Credit Hours:** (3) **Description** Introduction to psychoeducational assessment of preschool children; includes issues surrounding early assessment, skill development with preschool instruments, and related report writing, conferencing.

### PSYC 7809 - Adv Sch Psych Practicum

**Credit Hours:** (3) **Description** Applied experience utilizing both direct and indirect school psychological services and supervision; students will assume the role of case manager providing comprehensive services for multiple clients; students will also be expected to supervise students in the beginning intervention practicum. Restricted by Program or by Permit Grades of S, U, or IP will be given.

### PSYC 7812 - Intern: School Psyc

**Credit Hours:** (3-6) **Description** Supervised field placement in school and/or community agency settings; requires a minimum of 1200 hours for the EdS, at least half of which must be in a school setting. Minimum of 6 hours or a maximum of 12 hours applied toward the degree. Restricted by Program or by Permit. **PREREQUISITE(S):** Permission of program director, grades of S in all previous practica. Doctoral program students complete PSYC 8999. Grades of S, U, or IP will be given.

### PSYC 7900 - Psychology of Gender

**Credit Hours:** (3) **Description** This course will examine how gender affects all aspects of our lives at both the societal/cultural level and the individual level within the societal/cultural context.

### PSYC 7996 - Thesis

**Credit Hours:** (1-3) **Description** Independent research for master's degree. Application for writing a thesis must be filled out on an approved form after consultation with major professor and filed with the Graduate School. Only 3 hours

may be counted toward degree requirements. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

### PSYC 7997 - Specialty Review Paper (MSGP)

**Credit Hours:** (1-3) **Description** Independent research for specialty review paper for students in the Master of Science in General Psychology program. NOTE: Only 3 hours may be counted toward degree requirements. Grades of S,U, or IP will be given.

### PSYC 8000 - History/System Psyc

**Credit Hours:** (1) Former: 8000 **Description** Seminar of basic issues in contemporary psychology within their historical context with extensive examination of their implications for theoretical and professional applications. Permission of Insgrtuctor required.

### PSYC 8010-8029 - Special Topics in Psychology

**Credit Hours:** (1-3) **Description** Topics are varied and announced in online class listings.

### PSYC 8110 - Ethics And Psychology

**Credit Hours:** (3) **Description** In-depth review of the ethical standards that impact work of psychologists in health services, consultation, teaching, and research settings; emphasizes ethical issues and dilemmas, mastery of ethical decision-making, understanding community standards for practice, and the interface between ethical guidelines and the law.

### PSYC 8203 - Behavior Analysis

**Credit Hours:** (3) **Description** A comprehensive treatment of behavioral principles in their application to simple and complex forms of behavior. The course focuses on operant conditioning of animal behavior and demonstrates the basic behavioral principles at work in their simplest form. These operant conditioning principles are extended to human behavior occurring in the natural environment. Increasingly complex human behaviors are successively introduced.

### PSYC 8207 - Developmental Psyc

**Credit Hours:** (3) **Description** Focuses on theories, issues, and research related to biological, cognitive, and social

development from infancy through adulthood. It promotes understanding of different perspectives on lifespan development by addressing three questions: (1) What changes?, (2) How does it change?, and (3) When does it change?

### PSYC 8208 - Psyc Of Perception

**Credit Hours:** (3) **Description** An examination of the historical development, research, and major theoretical positions in the area of perceptual psychology. Major emphasis is placed on theoretical and experimental treatment of the basic perceptual phenomena.

### PSYC 8211 - Cognitive Processes

**Credit Hours:** (3) **Description** Overview of cognitive psychology and cognitive science, with emphasis on theoretical explanations and critical evaluation of empirical evidence; topics include perception and attention, short- and long-term memory, language, problem solving, reasoning, decision making, and artificial intelligence.

### PSYC 8212 - Industrial Psychology

**Credit Hours:** (3) **Description** Examination of the content and methodology used by industrial psychologists in personnel selection, classification, training, and performance evaluation. Students are familiarized with the skills necessary for these activities, as well as the guidelines and legal constraints on organizations' hiring, promotion, and performance evaluation practices.

### PSYC 8213 - Cognitive Science

**Credit Hours:** (3) **Description** Cognitive Science. Integrates bottom-up empirical research with top-down modeling to explain how information is processed in the brain at multiple levels, ranging from ion channels to neural circuits to behavior. Examples include basic neuroanatomy, neuroplasticity, motor control, perception, and higher-order cognition.

### PSYC 8214 - Industrial Training

**Credit Hours:** (3) **Description** Examination of the content and methodology used by industrial psychologists to develop, implement, and evaluate training programs in work settings. Students acquire the skills to conduct training needs assessments, select from various training platforms, develop training programs, and assess the degree to which they

accomplish their organizational objectives. The course includes exposure to new computer-based and web-based training technologies.

### PSYC 8215 - Organizational Psyc

**Credit Hours:** (3) **Description** The course deals with the major organizational determinants of individual and group behavior and performance. The characteristics of organization structure and climate are explored from both a classical and a contemporary viewpoint. Organization change and development theories are examined plus the major ancillary theoretical positions on leadership, individual and group performance, behavior modification, selection and training. **PREREQUISITE(S):** Permission of instructor.

### PSYC 8217 - Social Psychology

**Credit Hours:** (3) **Description** Review of theoretical and empirical literature examining behavior and experience of individuals in social settings; includes coverage of attributions and interpersonal perception, attitude formation and change, prejudice and stereotyping, interpersonal attraction, social influence, human aggression, and prosocial behavior.

### PSYC 8218 - Incr Orgnl Productivity

**Credit Hours:** (3) **Description** Examination of the theories and methodologies used to diagnose organization problems, determine their causes, and select, implement, and evaluate interventions to mitigate the problems and increase organizational productivity. Students acquire a knowledge base and specific skills employed by organizational psychologists to help effect organizational improvements. The course involves lecture, discussion, and group projects. **PREREQUISITE(S):** PSYC 7215/PSYC 8215.

### PSYC 8219 - Soc/Persnlty Devel

**Credit Hours:** (3) **Description** A general survey of social and personality development from infancy through adolescence. The course consists of three sections: (1) general theoretical perspectives, including intrapsychic, cognitive, and social learning approaches; (2) intra-individual phenomena such as sex role, traits, moral development, etc.; (3) inter-individual phenomena such as family interactions, peer interactions, and societal influences.

### PSYC 8220 - Social Cognition

**Credit Hours:** (3) **Description** Review of major contemporary issues in social psychology from a social cognitive perspective; cognitive-information processing approach as it applies to social psychology; attributions, schemas, attention and perception, impression-formation and social memory, accessibility and priming, the self, and decision making.

### PSYC 8221 - Natural Lang Processng

**Credit Hours:** (3) *Cross listing* (Same as COMP 7780-COMP 8780) **Description** (Same as COMP 7780-8780).

Computational aspects, algorithms, and techniques for human language processing including lexical analysis, syntactic parsing, semantics, word sense disambiguation, logic forms, dialogue, and pragmatics; applications include question answering and information extraction among others.

**PREREQUISITE(S):** COMP 6040 or COMP 6041 or permission of instructor.

### PSYC 8222 - Psychology Human Memory

**Credit Hours:** (3) **Description** Major theoretical and empirical issues in the study of human memory; major emphasis on nature of structures and processes involved in memory encoding and retrieval and nature of representations available to memory.

### PSYC 8223 - Intelligent Tutoring

**Credit Hours:** (3) **Description** Covers selected internet-based training systems and their links to cognition, education, and computing; focuses on learning environments, including basic theories in learning science, advanced learning technologies, software development, and applications in academic settings.

### PSYC 8301 - Research Design & Meth

**Credit Hours:** (3) **Description** Emphasis on mathematical and nonmathematical analyses of psychological data, theoretical and experimental implications of different analyses, various data collection techniques, and types of experimental and statistical control; ethical issues and ethical principles of research conduct. **PREREQUISITE(S):** Psychology graduate student or permission of instructor

### PSYC 8302 - Adv Statistics Psych I

**Credit Hours:** (3) **Description** Introduction to general linear model; multiple regression analysis, and single- and multiple-factor analysis of variance; emphasis on using software

programs to perform statistical analyses.

**PREREQUISITE(S):** Psychology graduate student or permission of instructor.

### PSYC 8303 - Adv Statistics Psych II

**Credit Hours:** (3) **Description** Intermediate and advanced topics related to analysis of variance, including fixed and random effects, repeated measures, non-orthogonal designs, and the analysis of covariance; traditional analysis of variance concerns within framework of general linear model; scales of measurement, planned and post hoc comparisons, power analysis and concept of effect size. **PREREQUISITE(S):** PSYC 7302 or equivalent.

### PSYC 8304 - Meas Th & Psychomet

**Credit Hours:** (3) **Description** Measurement theory and psycho-metrics involved in the construction and evaluation of psychological measurement instruments will be stressed. Particular emphasis will be placed on theory and techniques of psychological measurement, scale and inventory construction, reliability, validity, evaluation of measurement quality, classical and contemporary measurement theory, and standardization. Restricted by program or permit. **PREREQUISITE(S):** PSYC 7301 and PSYC 7302 or equivalents.

### PSYC 8305 - Quant Meth Review Rsch

**Credit Hours:** (3) *Cross listing* (Same as PUBH 7305-PUBH 8305) **Description** (same as PUBH 7305-8305). Quantitative procedures (meta-analysis) for reviewing research findings in psychology and other social sciences; techniques for locating and coding research studies, calculating effect sizes, and analyzing study findings. **PREREQUISITE(S):** Psychology graduate student or permission of instructor.

### PSYC 8306 - Linear Struct Modeling

**Credit Hours:** (3) **Description** An applied introduction to cross sectional and longitudinal structural equation modeling with single or multiple groups, including: path analysis, confirmatory factor analysis, measurement invariance, mediation, moderation, mixture modeling, latent growth curves, exploratory structural equation modeling and other latent variable models which include applications to experimental and non-experimental data.

**PREREQUISITE(S):** PSYC 7301 and PSYC 7302 or equivalents.

### PSYC 8307 - Models Program Eval

**Credit Hours:** (3) **Description** History and nature of program evaluation, review of different approaches taken to evaluation by variety of major theorists in the field; practice in evaluation.

### PSYC 8308 - Appl Multivariate Stat

**Credit Hours:** (3) **Description** Multivariate analysis of variance (MANOVA) with independent designs and its extension to repeated measures ANOVA. Goals include review conceptual bases, learn SPSS procedures, analyze simple and complex designs, and learn special post hoc procedures. **PREREQUISITE(S):** PSYC 7302 or equivalent.

### PSYC 8309 - Focus Group Research

**Credit Hours:** (3) **Description** Examination of the general logic of focus group research, including strengths and weaknesses of this approach. Methodology will be covered in depth, including how to plan a project, development of questions for a focus group, moderating the group, and analyzing and reporting data. Completion of a semester project is required.

### PSYC 8310 - Mixed-Model Regress Anly

**Credit Hours:** (3) **Description** Instruction in the use of mixed-model regression with a focus on design and analysis of group-randomized trials; attention also given to analysis of data from surveys based on cluster sampling, longitudinal studies, and studies involving matching. **PREREQUISITE(S):** PSYC 7301 and PSYC 7302 or equivalents.

### PSYC 8311 - Appl Cat Data Analysis

**Credit Hours:** (3) **Description** Instruction includes tabular, logistic, and Poisson and Cox regression, as well as interpretation of SAS output. For advanced students in psychology, education, and public health pursuing a career in research. **PREREQUISITE(S):** PSYC 7301 and PSYC 7302 or equivalents.

### PSYC 8312 - Qualitative Resrch/Psyc

**Credit Hours:** (3) **Description** Examines history and current practice of research stemming from a human science philosophy, introducing a variety of qualitative research methodologies; examines differences and similarities in

human and natural sciences in order to appreciate the significance of epistemology on research practice.

**PREREQUISITE/COREQUISITE:** PSYC 7301 or permission of instructor. **PREREQUISITE(S)** or **COREQUISITE(S):** PSYC 7301 or permission of instructor.

### PSYC 8313 - Computational Models Cog Sci

**Credit Hours:** (3) **Description** A survey of popular techniques used to model mental processes and experimental data. Both computational and mathematical models will be considered. Examples include: artificial neural networks for psycholinguistics, Bayesian methods for learning and categorization, general processing tree models for reaction time studies, diffusion and random walk processes of memory, and knowledge representation. The seminar will focus on conceptual issues while providing a brief mathematical introduction to the models for a general behavioral science audience.

### PSYC 8314 - Programming Computation in Psych

**Credit Hours:** (3) Former: (PSYC 8503) Restricted to Program or by Permit.

### PSYC 8315 - Randomized Clinical Trials

**Credit Hours:** (3) **Description** The purpose of this course is to provide students with a thorough grounding in planning and executing randomized clinical trials (RCTs) including design, management, evaluation, and resource acquisition. Restricted by Program or by Permit **PREREQUISITE(S):** PSYC 7301 and PSYC 7302.

### PSYC 8407 - Cognition & Emotion

**Credit Hours:** (3) **Description** Cognition and emotion affect behavior in a myriad of ways. The interactions of cognition and emotion are also quite complex. The primary purpose of this course is to provide an overview of research on the cognitive and affective bases of behavior. The course is also designed to foster critical thinking and presentation skills.

### PSYC 8411 - Psyc Process Research

**Credit Hours:** (3) **Description** Investigates current practice of examining effects of interventions within sessions, of therapy events, and of differences in psychotherapy orientations. Through examining mock therapy transcripts and



interviews, students build skills toward independent implementation of psychotherapy or interview-related research. **PREREQUISITE(S):** PSYC 7301 and PSYC 7434, or permission of instructor

### **PSYC 8412 - Psychopathology**

**Credit Hours:** (3) **Description** Survey of the manifestations of abnormal behavior and psychological processes; detailed analysis of clinical and experimental literature concerning psychological and psychiatric disorders and their etiology. Historical principles are emphasized. Restricted by Program or by Permit.

### **PSYC 8416 - Child Psychopathology**

**Credit Hours:** (3) **Description** A survey of the major theoretical formulations of childhood disorders, including learning, developmental, psychoanalytic, and family systems theories. Organic, familial, and sociocultural influences are discussed. Emphasis is placed on basic research that contributes to our understanding of these difficulties. Traditional approaches to intervention are reviewed along with family treatment.

### **PSYC 8419 - Family Therapy**

**Credit Hours:** (3) **Description** Overview of family therapy as treatment modality and point of view, emphasizing interdependence of theory, practice, and research; focuses on brief problem-focused therapy, behavioral couples and family therapy, multigenerational family systems therapy, strategic and structural approaches, systemic family therapy, experiential approaches, and narrative family therapy. **PREREQUISITE(S):** Permission of instructor.

### **PSYC 8420 - Personal Construct Thry**

**Credit Hours:** (3) **Description** In-depth seminar on personal construct theory, a cognitively oriented theory of personality stemming from the work of George Kelly. Philosophical assumptions and basic theory; use of repertory grid technique and its application to research on such topics as cognitive complexity, development, interpersonal relationships, psychopathology, and psychotherapy. Restricted by Program or by Permit. Restricted by Program or by Permit.

### **PSYC 8428 - Foundatns Clinical Psyc**

**Credit Hours:** (3) **Description** Introduction to fundamental concepts and methods of clinical psychology conceived as

application of scientific reasoning to human problems; historical and scientific foundations for scientist-practitioner model, and various roles of clinical psychologist in social context; ethical, legal, and multi-cultural issues emphasized. Restricted by Program or by Permit.

### **PSYC 8430 - Clin Assessment/Ability**

**Credit Hours:** (3) **Description** Introduction to psychological assessment of cognitive abilities and achievement; exposure to basic psychometric concepts; observation and interpretation of assessment related to behavior; specific emphasis on development of assessment skills such as test administration, test interpretation, and report writing; ethical and legal issues of professional conduct emphasized. Restricted by Program or by Permit.

### **PSYC 8432 - Clinic Asses/Case Cncpt**

**Credit Hours:** (3) **Description** Comprehensive review of fundamental concepts and practices of clinical assessment as application of scientific reasoning to problem of case conceptualization; development of conceptualization skills to integrate interview, objective assessment, and systematic observations; evaluation of different assessment approaches for empirical support and utility in case management; critical and analytic thinking, ethical and legal issues of professional conduct emphasized. Restricted by Program or by Permit.

### **PSYC 8434 - Clin Psychotherapies**

**Credit Hours:** (3) **Description** In-depth study of methods of psychotherapy and intervention strategies, their basic assumptions, spheres of applicability, and typical outcomes. Therapeutic approach covered will depend upon the particular instructor. May be repeated for maximum of 20 credits with change in topic. May be repeated for maximum of 20 credits with change in topic. Restricted by Program or by Permit.

### **PSYC 8435 - Intro To Psychotherapy**

**Credit Hours:** (1-3) **Description** Required for all clinical students. Surveys major traditions of psychotherapy - psychodynamic, humanistic, cognitive-behavioral, and systemic - considering originators' works as well as contemporary exponents; includes didactic (reading, discussion) and experiential learning (exercises, role plays) to promote both conceptual and practical acquaintance with the implications of each tradition. Students can enroll in this course for 3 hours and then repeat once for 1 hour. Restricted by Program or by Permit.

**PSYC 8438 - Pract Clinical Trtmt**

**Credit Hours:** (1-3) **Description** Practical experience to students in clinical psychology, permitting them to work under professional supervision for 42 client contact hours in the Psychological Services Center. Students conduct intake interviews, administer and interpret psychological tests, and provide therapy. May be repeated for maximum of 24 hours credit. Restricted by Program or by Permit. Grades of S, U, or IP will be given.

**PSYC 8439 - Clin Assessmnt/Report Wrtnng**

**Credit Hours:** (3) **Description** Develops strong assessment skills and ability to write comprehensive mental health reports; students perform assessments and receive instruction in the Psychological Services Center; instructor provides feedback on student's testing, analysis of tests, integration of tests into comprehensive understanding of client, and writing professional reports. Restricted by Program or by Permit. **PREREQUISITE(S):** PSYC 7412/PSYC 8412, PSYC 7428/PSYC 8428, PSYC 7432/PSYC 8432, and PSYC 7621/PSYC 8621 Grades of S/U, or IP will be given

**PSYC 8440 - Behavioral Medicine I**

**Credit Hours:** (3) **Description** Overview of behavioral medicine and examination of psychologists' roles in healthcare settings; psychological and interpersonal factors that affect healthcare delivery will be examined, such as physician-patient communication, gender, and ethnic diversity; differences in ethical underpinnings between medicine and psychology will be explored. Restricted by Program or by Permit.

**PSYC 8441 - Psyc/Medical Illness**

**Credit Hours:** (3) **Description** Addresses application of psychological principles to promote coping with medical disability and optimal healing; diagnostic interviewing and medical consulting skills emphasized; psychological and cognitive impact on various medical diseases and disorders reviewed; biological bases of behavior emphasized. Restricted by Program or by Permit.

**PSYC 8506 - Sem Clinical Psyc**

**Credit Hours:** (3)

**PSYC 8507 - Sem Industrial Psyc**

**Credit Hours:** (3)

**PSYC 8509 - Sem School Psychology**

**Credit Hours:** (3)

**PSYC 8510 - Sem Organztnl Psyc**

**Credit Hours:** (3)

**PSYC 8512 - Sem Develpmtal Psyc**

**Credit Hours:** (3)

**PSYC 8514 - Sem Cognitive Science**

**Credit Hours:** (3) *Cross listing* (same as COMP 8514, PHIL 8514, A USP 8514). **Description** Systematic study of current topics in Cognitive Science with an emphasis on its interdisciplinary nature. Topics will vary each semester. repeatable up to 18 credit hours.

**PSYC 8515 - Sem Social Psychology**

**Credit Hours:** (3)

**PSYC 8516 - Issues Psychothrpy Rsch**

**Credit Hours:** (3) **Description** Research evidence pertaining to basic questions about psychotherapy and its effectiveness; classic contributions and current research findings.

**PSYC 8517 - Grant Prop Writing/Psyc**

**Credit Hours:** (3) **Description** Introduction to grant-writing process with emphasis on NIH funding; topics include identifying funding sources, grant writing and resubmissions, and grant reviewing; students prepare a suitable grant application as part of the course.

**PSYC 8520 - Tchng Skills Grad Asst**

**Credit Hours:** (3) **Description** Overview of teaching responsibilities and skills and discussion of teaching issues for graduate teaching assistants; supervised practical experience teaching college courses and feedback on performance. May be repeated for a maximum of 12 credit hours.

**PREREQUISITE(S):** Permission of graduate coordinator

**PSYC 8521 - Teaching of Psychology**

**Credit Hours:** (3) Former: (PSYC 8501) Restricted by Program or by Permit.

**PSYC 8530 - Psychology of Language**

**Credit Hours:** 3 *Cross listing NA* **Description** This course will cover major findings in psycholinguistics, a knowledge base of Linguistics, basics on conducting and designing experiments in language research, and current findings and theoretical debates. Standard Letter

**PSYC 8601 - Res Prac Gen Psych**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given.

**PSYC 8602 - Res Pract Phys Psych**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given.

**PSYC 8603 - Res Prac Exp Psych**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given.

**PSYC 8604 - Res Prac Comp Psych**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given.

**PSYC 8605 - Res Prac Social Psych**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given.

**PSYC 8606 - Res Prac Clinical Psych**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given.

**PSYC 8607 - Res Prac Devlpmntl Psych**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given.

**PSYC 8608 - Res Prac Neuropsych**

**Credit Hours:** (1-3) **Description** Grades of S, U, or IP will be given.

**PSYC 8609 - Res Prac School Psych**

**Credit Hours:** (1-3) **Description** Grades of A-F, or IP will be given.

**PSYC 8610 - Field Prac Clin Psych**

**Credit Hours:** (1-6) **Description** Supervised experience in the use of psychological diagnostic, treatment, or community intervention procedures in various community agencies and facilities. May be repeated for a total of 12 credits. Restricted by Program or by Permit. Grades of S, U, or IP will be given.

**PSYC 8611 - Fld Prac Soc-Indust**

**Credit Hours:** (1-3) **Description** Seminar discussion and supervised experience in the application of basic psychological procedures and principles to social, personnel, and organizational activities in various industrial, military and community settings. May be repeated for a maximum of 9 credits. Grades of S, U, or IP will be given.

**PSYC 8614 - Prac School Psych**

**Credit Hours:** (3) **Description** Supervised experience in the application of psychological procedures in educational and clinical settings. A minimum of two practica are required. First practicum requires grades of 3.0 or better in PSYC 7803 and PSYC 7804; second requires 3.0 or better in PSYC 7805 and PSYC 7806, and S in first practicum. May be repeated for a maximum of 12 credits. Restricted by Program or by Permit. Grades of S, U, or IP will be given.

**PSYC 8615 - Special Problems**

**Credit Hours:** (1-3) **Description** Independent investigation of a research problem, or directed readings, in a selected area of psychology chosen in consultation with the instructor. Only six hours credit may be applied to the degree. May be repeated for a maximum of 6 credits. Grades of A-F, or IP will be given

**PSYC 8616 - Clin Pract Neuropsych**

**Credit Hours:** (3) **Description** The advanced student interested in neuropsychology will receive supervised experience in the use of psychodiagnostic techniques in various community settings; training covers basic diagnostic techniques, specialized diagnostic techniques, and

neurological assessment procedures. May be repeated for a maximum of 9 credits. **PREREQUISITE(S):** Permission of instructor

### **PSYC 8618 - Res Prac Cogn Psych/Sci**

**Credit Hours:** (1-3) **Description** May be repeated for a maximum of 3 credits. Grades of S, U, or IP will be given.

### **PSYC 8619 - Child/Family Practicum**

**Credit Hours:** (1-3) **Description** May be repeated for a maximum of 9 credits. Grades of S, U, or IP will be given. Restricted by Program or by Permit. Restricted by Program or by Permit

### **PSYC 8620 - Major Area Paper**

**Credit Hours:** (3-6) **Description** Independent investigation of an approved topic of the student's specialization, leading to the preparation of a publishable paper following the format of the Psychological Bulletin or the Psychological Review. Only 6 hours may be counted toward degree requirements. Grades of S, U, or IP will be given.

### **PSYC 8621 - Research Practicum**

**Credit Hours:** (3) **Description** This practicum is required of all first year doctoral students and others receiving department financial assistance and may be taken by General Psychology Masters students. This course serves to introduce the student to research currently being conducted by faculty in the Department of Psychology. Grades of S, U, or IP will be given. Restricted by Program or by Permit. Restricted by Program or by Permit.

### **PSYC 8622 - Res Prac: Behav Med**

**Credit Hours:** (1-3) **Description** May be repeated for a maximum of 12 credit hours. Grades of S, U, or IP will be given. Restricted by Program or by Permit. Restricted by Program or by Permit

### **PSYC 8701 - Behavioral Neuroscience**

**Credit Hours:** (3) **Description** A comprehensive study of the relationships between brain function and behavior; topics include neuroanatomy, neurophysiology, neuropharmacology, sensory systems, learning and memory, motor systems and disorders, and neuropsychiatric diseases.

### **PSYC 8705 - Neuropsychopharmacology**

**Credit Hours:** (3) **Description** Overview of basic principles of neuropharmacology and contemporary issues in clinical psychopharmacology; introduces principles of pharmacokinetics and dynamics, drug-receptor pharmacology, neuroanalytical methodology, and chemical neuroanatomy of the brain; culminates with overviews of contemporary drug treatment strategies for a range of cognitive, pathological, and neurological disorders, including substance abuse.

### **PSYC 8707 - Professional Issues**

**Credit Hours:** (1) **Description** Prepares late-doctoral students in school and clinical psychology for internship and future careers; includes developing a professional vita, articulating a theoretical orientation and professional identity, obtaining an internship, career options, effective supervision, licensure and private practice issues. May be repeated for a maximum of 4 credit hours. Restricted to Program or by Permit. Grades of S, U, or IP will be given.

### **PSYC 8800 - Intro School Psychology**

**Credit Hours:** (3) **Description** Survey of school psychology including historical foundations, roles and functions, school and community practices, standards and ethics, issues, technological developments; trends in credentialing and practice at the state and national level.

### **PSYC 8802 - Child Disability/Family**

**Credit Hours:** (3) **Description** An overview of childhood disability and family considerations applied to psychological services in school and agency settings; agency and family visitations provide experiential learning in addition to theory and research. **PREREQUISITE(S):** Course on characteristics of exceptional children or permission of instructor.

### **PSYC 8803 - Psych Ed Assessmnt I**

**Credit Hours:** (3) **Description** Critical analysis of intellectual assessment including skill development in administration, scoring, and interpretation of major individual tests of intelligence; related psychoeducational instruments with emphasis on case study data collection and report writing. Restricted by Program or by Permit.

### **PSYC 8804 - Psych Ed Assessmnt II**

**Credit Hours:** (3) **Description** Critical analysis of personality assessment including skill development in administration, scoring, and interpretation of major personality assessment techniques; related psychoeducational instruments with emphasis on case study data collection and report writing. Restricted by Program or by Permit. **PREREQUISITE(S):** School psychology students must have a grade of 3.0 or higher in PSYC 7803.

### PSYC 8805 - Psych Consultation

**Credit Hours:** (3) **Description** This course teaches the theory and skills needed for providing consultation to students and families in educational and clinical settings; focusing on an ecological, problem-centered model, content will include factors influencing the consultation process at the individual, group, and system level. Restricted by Program or by Permit. **PREREQUISITE(S):** School psychology students must have a grade of 3.0 or higher in PSYC 7803 and PSYC 7804.

### PSYC 8806 - Sch Psych Interventions

**Credit Hours:** (3) **Description** Comprehensive review of psychosocial interventions for use with children, adolescents, and their families and educators; counseling theories; crisis response; dual emphasis on empirically-validated interventions and on the practical application of skills in educational and clinical settings. Restricted by Program or by Permit. **PREREQUISITE(S):** School Psychology students must have a grade of 3.0 or higher in PSYC 7803 and PSYC 7804.

### PSYC 8807 - Academic Interventions

**Credit Hours:** (3) **Description** Comprehensive review of evidenced-based academic interventions in the areas of reading, writing, and mathematics; theoretical foundations of literacy and mathematics; techniques to promote effective learning environments; collaboration with teachers and other educational professionals. Restricted by Program or by Permit

### PSYC 8808 - Psychoed Assessment III

**Credit Hours:** (3) **Description** Introduction to psychoeducational assessment of preschool children; includes issues surrounding early assessment, skill development with preschool instruments, and related report writing, conferencing.

### PSYC 8809 - Adv Sch Psych Practicum

**Credit Hours:** (3) **Description** Applied experience utilizing both direct and indirect school psychological services and supervision; students will assume the role of case manager providing comprehensive services for multiple clients; students will also be expected to supervise students in the beginning intervention practicum. Restricted by Program or by Permit. Grades of S, U, or IP will be given.

### PSYC 8812 - Intern: School Psyc

**Credit Hours:** (3-6) **Description** Supervised field placement in school and/or community agency settings; requires a minimum of 1200 hours for the EdS, at least half of which must be in a school setting. Minimum of 6 hours or a maximum of 12 hours applied toward the degree. Restricted by Program or by Permit. **PREREQUISITE(S):** Permission of program director, grades of S in all previous practica. Doctoral program students complete PSYC 8999. Grades of S, U, or IP will be given.

### PSYC 8900 - Psychology of Gender

**Credit Hours:** (3) **Description** This course will examine how gender affects all aspects of our lives at both the societal/cultural level and the individual level within the societal/cultural context.

### PSYC 8999 - Predoctoral Internship

**Credit Hours:** (0) **Description** Psychology majors may not use this course to fulfill degree requirements. Restricted by Program or by Permit. Restricted by Program or by Permit.

### PSYC 9000 - Dissertation

**Credit Hours:** (1-9) **Description** Independent research for Doctor of Philosophy degree. Application for writing a dissertation must be filled out on an approved form after consultation with the major professor and filed with the Graduate School. Only 9 hours may be counted toward degree requirements. Student must be enrolled in this course during the semester in which the student expects to graduate. Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

### Public Administration

#### PADM 6101 - Political Statistics

**Credit Hours:** (3) **Description** (Same as POLS 6101). Introduction to analysis of quantitative data used to test,

statistically, hypotheses in fields of political science and public and health administration.

### **PADM 6207 - Health Politics/Policy**

**Credit Hours:** (3) **Description** Introduction to political, economic, and social forces affecting the health care system in the United States; emphasizes development and comparison of health policies within the context of American politics; analysis of health policies within the context of the stages of American public policy-making.

### **PADM 6221 - Issues/Urban Admin \*\***

**Credit Hours:** (3) **Description** Examination of politics, administration, and public policy in an urban context; focus on the administrative aspects of selected governmental policy-making processes; interrelationships of governments at various levels, urban challenges facing modern public administration.

### **PADM 6225 - Application/Urban Admin**

**Credit Hours:** (3) **Description** Study of the tools and strategies of public and nonprofit administration to accomplish collective purposes, develop communities, and enhance civic capacity toward improved quality of life in urban settings.

### **PADM 6228 - Grant Development/Management**

**Credit Hours:** (3) **Description** Elements of grant writing process; skills to seek, solicit, and receive grant awards from foundation and government sources; administration of awards to meet goals of recipient and granting agency.

**PREREQUISITE(S):** Permissions of Coordinator of Graduate Studies.

### **PADM 6401 - Comparative Public Adm**

**Credit Hours:** (3) **Description** Comparative examination of differing concepts and perspectives of public administration, addressing variability in administrative systems, political power and control over public bureaucracies, education and recruitment of public bureaucrats, and the bureaucratic concept of public interest and responsiveness to the public.

**PREREQUISITE(S):** Limited to sociology majors; permission of graduate coordinator.

### **PADM 6412 - Neigh Dev/Social Entrep**

**Credit Hours:** (3) **Description** (Same as ANTH 6412). Role of various institutions and their relationship to developmental needs of inner-city neighborhoods; evolution of American cities as context for understanding urban neighborhoods and poverty; institutions that shape urban development policy; partnerships and collaborations of neighborhood associations, governments, and nonprofit agencies.

### **PADM 6710-6719 - Special Topics in Public Administration**

**Credit Hours:** (1-3)

### **PADM 7213 - Sem Publ Pol Analysis**

**Credit Hours:** (3) **Description** Empirical and normative analysis of public policy at the local, state, national, and international levels, emphasizing the theories, literature, and methodologies current to this field.

### **PADM 7224 - Sem Urban Problems \*\***

**Credit Hours:** (3) **Description** Problems inherent in the growing urban developments in the United States; the governmental organization of metropolitan areas and the difficulties of coordination of government functions; proposed remedies and the reception of new approaches in selected metropolitan areas.

### **PADM 7235 - The Memphis Economy**

**Credit Hours:** (3) **Description** (Same as ECON 7235). Analytic and descriptive review of the Memphis regional economy; includes labor markets, industrial and corporate organizations, logistical systems, urban sprawl, and demographics of race and gender.

### **PADM 7600 - Sem Adm Theory & Ethics \*\***

**Credit Hours:** (3) **Description** Significance of public administration in American government; includes an introduction to formal organization theory and bureaucracy, decision-making theory, leadership and motivational theory, and current trends and problems in the study of public administration.

### **PADM 7601 - Research Methods**

**Credit Hours:** (3) **Description** Issues and techniques in data collection for design and implementation of independent

research projects; logic of conducting research in public administration, measurement, and sampling; introduction to program evaluation and specific quantitative decision-making techniques.

### **PADM 7602 - Public Bdgt Adm/Fin \*\***

**Credit Hours:** (3) **Description** Detailed study of administrative, technical and political arenas of financial policy, the budgetary process, and fiscal controls for public and nonprofit organizations.

### **PADM 7603 - Pblc/Nonprofit Contr \*\***

**Credit Hours:** (3) **Description** Theoretical and practical examination of projects and contracts as tools of policymaking in the public and nonprofit sectors; management projects and third party vendors; alternative mechanisms for public service delivery and an appreciation for the difficulties involved.

### **PADM 7604 - Social Science In Law**

**Credit Hours:** (3) **Description** (Same as POLS 7604). Applications of social science to such public policy questions as discrimination, obscenity, parole, trademarks, death penalty, child custody, and criminal offender profiles.

### **PADM 7605 - Human Resources Admin \*\***

**Credit Hours:** (3) **Description** Policies, methods, and techniques utilized in public and health organizations; special attention is given to problems reflecting contemporary demands upon human resource systems, capacity to diagnose problems, select the most effective means of addressing them, and plan appropriate courses of action developed through case studies.

### **PADM 7606 - Sem Administrative Law**

**Credit Hours:** (3) **Description** Role and nature of administrative law, including procedural requirements and judicial review of administrative actions and liability of government for torts and breach of contract.

### **PADM 7607 - Public Mgmt Leadership**

**Credit Hours:** (3) **Description** Theoretical and applied aspects of public and nonprofit leadership addressed in a holistic approach; focus on the most current literature and public debate; leadership examined from various perspectives

reflected across the curriculum: administrative theory, public law, finance, ethics, research methods, and public policy.

### **PADM 7608 - Public Mgmt Inf Sys**

**Credit Hours:** (3) **Description** (POLS 7608-8608). Analysis and application of responsibilities of public organization managers; focus on technological strategies and skills for meeting those responsibilities including budget processes, information systems and dissemination, decision-making, citizen participation, and program development and evaluation.

### **PADM 7609 - Sem Administratv Ethics**

**Credit Hours:** (3) **Description** Introduction to ethical theories and principles as they apply to the practice of public administration, basic legal constraints such as conflict of interest laws, and more subtle ethical dilemmas that arise in the exercise of discretion of public administrators.

### **PADM 7610 - Internship Public Admin**

**Credit Hours:** (3-6) **Description** Participation in some type of field experience, including a written report critically describing the student's responsibilities. Field experience may result from a supervised internship in cooperating public or nonprofit organizations or from appropriate administrative experience if the student is employed in a public or nonprofit organization.

### **PADM 7611 - Practicum**

**Credit Hours:** (3-6) **Description** Application of knowledge, concepts, analytical tools to contemporary issues challenging modern managers; individuals pursue special projects in local public and nonprofit organizations, conducting research under the guidance of a faculty committee, or work with the Institute of Governmental Studies and Research on current problems in public administration. May be repeated for a total of 6 credits. Lecture/Lab Hours: 3 contact hours (2-5 pm)/week.

### **PADM 7612 - Program/Policy Evaltn**

**Credit Hours:** (3) **Description** Models, theories, and techniques of program and policy evaluation in public administration; evaluation research design, data collection and analysis, dissemination of results, and possible applications of evaluations to policy-making and administration; organizational and political contexts of evaluation.

### **PADM 7614 - Interagency Collab/Adm**

**Credit Hours:** (3) **Description** Theoretical and applied aspects of public sector administrative innovation focusing on changing intergovernmental relationships and the growing number and types of partnerships between the public and nonprofit sectors; topics include designing innovative public service programs/structures, potentials for conflict, ethical dilemmas, performance monitoring, and accountability requirements.

### **PADM 7635 - Issues Pub Human Resour**

**Credit Hours:** (3) **Description** Special issues of current interest that relate to management, planning, and development of human resources in nonprofit and public agencies.

### **PADM 7641 - Thry/Prac Nonprofit Adm \*\***

**Credit Hours:** (3) **Description** Introduction to theoretical foundations, structures, and processes of nonprofit organizations; historical development and impact, social, political, legal, and economic environment in which nonprofit organizations exist; complexities of organizational governance shared by volunteer and professional staff decision-makers.

### **PADM 7642 - Res Dev Nonprofit Org \*\***

**Credit Hours:** (3) *Cross listing* (same as PSYC 7305-PSYC 8305) **Description** Introduction to various resources important to nonprofit organizations including financial support, volunteers, and community awareness, and to wide range of organization activities utilized for acquisition and maintenance of these resources. **PREREQUISITE(S):** Permission of Coordinator of Graduate Studies

### **PADM 7643 - Semn Nonprofit Adm&Philanth \*\***

**Credit Hours:** (3) Former: (PSYC 7306-8306) **Description** Introduction to principles and practices of managerial and financial accounting in nonprofit organizations, including examining performance and financial condition; emphasis on making program choices and decisions using financial management concepts to further effective and accountable nonprofit administration. **PREREQUISITE(S):** Permission of instructor.

### **PADM 7644 - Nonprofit Branding and Storytelling**

**Credit Hours:** 3 **Description** This course introduces the nonprofit organizational form and examines the complex social, political, legal, and economic environments in which nonprofits operate, the various roles they play on local, national, and international levels, and the structures, processes and complexities of organizational governance shared by volunteer and professional staff decision makers.

### **PADM 7645 - Social Justice and Nonprofit Advocacy**

**Credit Hours:** 3 **Description** Students will develop an understanding of historical and current social justice issues and movements as well as build theoretical and practical knowledge of social justice advocacy practices and skills.

### **PADM 7646 - Philanthropy, Nonprofits, and Social Change**

**Credit Hours:** 3 **Description** This course will focus on the meaning, purpose, and theories of philanthropy, it's connection to the nonprofit sector, and the ways in which philanthropy effects the wellbeing and social change efforts of NPOs. **PREREQUISITE(S):** PADM 7641: Theory and Practice of Nonprofit Administration

### **PADM 7661 - Contemp Persp PA**

**Credit Hours:** (3) **Description** In-depth examination of contemporary theories of public administration; emphasis on study of political, administrative, and legal context of public administration to further understanding of trends that affect present-day performance of government and nonprofit agencies.

### **PADM 7662 - Application/Public Serv**

**Credit Hours:** (3) Former: (PSYC 7308-8308) **Description** Assessment of current administrative needs in government and nonprofit agencies, social capital theory, project management and organizational learning concepts, quality improvement of public administrative practice; applied, field-based experiences.

### **PADM 7663 - Issue Public Mgmt Policy \*\***

**Credit Hours:** (3) **Description** Special issues of current interest that relate to planning, implementation, and evaluation of programs in public and nonprofit agencies; emphasis on policy analysis techniques.



### **PADM 7702 - Independent Study**

**Credit Hours:** (1-3) *Cross listing* Same as PSYC 7310-PSYC 8310. **Description** Independent investigation of research problems or directed readings in selected areas of public administration. May be repeated for a maximum of 6 credit hours.

### **PADM 7710-7719 - Special Topics in Public Administration**

**Credit Hours:** (1-3)

### **PADM 7720 - Social Entrepreneurship \*\***

**Credit Hours:** (3) **Description** Social entrepreneurship is a rapidly developing field in which entrepreneurs pursue innovative solutions to social problems. Social entrepreneurs assume a mission to create and sustain social value and impact. They draw upon fields of thought in both the business and nonprofit worlds and apply an entrepreneurial lens to create innovative and sustainable social enterprises. As the traditional lines blur between nonprofits, business and government, it is critical for students to understand the opportunities, challenges and obstacles in this new environment.

### **PADM 7721 - Performance Measurement**

**Credit Hours:** (3) **Description** This course introduces students to performance measurement and management. Performance measurement is the tool used to collect evidence that an agency is doing what it is supposed to do—improving an individual, family, neighborhood, community, state or nation. This course is intended for you to build your knowledge and practical experience in developing performance measures and understanding the context in which they are used.

### **PADM 7996 - Thesis**

**Credit Hours:** (1-6) **Description** The student must write and defend satisfactorily a thesis on a subject approved by the major professor and the committee. Grades of S, U, or IP will be given.

### **PADM 8213 - Sem Publ Pol Analysis**

**Credit Hours:** (3) **Description** Empirical and normative analysis of public policy at the local, state, national, and international levels, emphasizing the theories, literature, and

methodologies current to this field. **PREREQUISITE(S):** Successful completion of proficiency examination.

### **PADM 8224 - Sem Urban Problems \*\***

**Credit Hours:** (3) **Description** Problems inherent in the growing urban developments in the United States; the governmental organization of metropolitan areas and the difficulties of coordination of government functions; proposed remedies and the reception of new approaches in selected metropolitan areas. **PREREQUISITE(S):** SPAN 7101 or equivalent.

### **PADM 8600 - Sem Adm Theory & Ethics \*\***

**Credit Hours:** (3) **Description** (POLS 7600-8600). Significance of public administration in American government; includes an introduction to formal organization theory and bureaucracy, decision-making theory, leadership and motivational theory, and current trends and problems in the study of public administration. **PREREQUISITE(S):** SPAN 7102 or equivalent.

### **PADM 8601 - Research Methods**

**Credit Hours:** (3) **Description** Issues and techniques in data collection for design and implementation of independent research projects; logic of conducting research in public administration, measurement, and sampling; introduction to program evaluation and specific quantitative decision-making techniques.

### **PADM 8602 - Public Bdgt Adm/Fin**

**Credit Hours:** (3) **Description** Detailed study of administrative and political problems of fiscal policy, the budgetary process, and fiscal controls.

### **PADM 8603 - Pblc/Nonprofit Contr**

**Credit Hours:** (3) **Description** Theoretical and practical examination of projects and contracts as tools of policymaking in the public and nonprofit sectors; management projects and third party vendors; alternative mechanisms for public service delivery and an appreciation for the difficulties involved.

### **PADM 8605 - Human Resources Admin**

**Credit Hours:** (3) **Description** Policies, methods, and techniques utilized in public and health organizations; special attention is given to problems reflecting contemporary

demands upon human resource systems, capacity to diagnose problems, select the most effective means of addressing them, and plan appropriate courses of action developed through case studies.

### **PADM 8606 - Sem Administrative Law**

**Credit Hours:** (3) **Description** Role and nature of administrative law, including procedural requirements and judicial review of administrative actions and liability of government for torts and breach of contract. May be repeated for a maximum of 6 credits.

### **PADM 8607 - Public Mgmt Leadership**

**Credit Hours:** (3) **Description** Theoretical and applied aspects of public and nonprofit leadership addressed in a holistic approach; focus on the most current literature and public debate; leadership examined from various perspectives reflected across the curriculum: administrative theory, public law, finance, ethics, research methods, and public policy.

### **PADM 8608 - Public Mgmt Ing Sys**

**Credit Hours:** (3) **Description** Analysis and application of responsibilities of public organization managers; focus on technological strategies and skills for meeting those responsibilities including budget processes, information systems and dissemination, decision-making, citizen participation, and program development and evaluation.

### **PADM 8609 - Sem Administratv Ethics**

**Credit Hours:** (3) *Cross listing* (Same as COMM 7345-COMM 8345) **Description** Introduction to ethical theories and principles as they apply to the practice of public administration, basic legal constraints such as conflict of interest laws, and more subtle ethical dilemmas that arise in the exercise of discretion of public administrators.

### **PADM 8612 - Program/Policy Evaltn**

**Credit Hours:** (3) **Description** Models, theories, and techniques of program and policy evaluation in public administration; evaluation research design, data collection and analysis, dissemination of results, and possible applications of evaluations to policy-making and administration; organizational and political contexts of evaluation.

### **PADM 8614 - Interagency Collab/Adm**

**Credit Hours:** (3) **Description** Theoretical and applied aspects of public sector administrative innovation focusing on changing intergovernmental relationships and the growing number and types of partnerships between the public and nonprofit sectors; topics include designing innovative public service programs/structures, potentials for conflict, ethical dilemmas, performance monitoring, and accountability requirements.

### **PADM 8634 - Training/Dev Human Res**

**Credit Hours:** (3) **Description** Organizational, group, and individual development processes and philosophy for public, nonprofit, and health care agencies; special emphasis on application of knowledge and skills.

### **PADM 8635 - Issues Pub Human Resour**

**Credit Hours:** (3) **Description** Special issues of current interest that relate to management, planning, and development of human resources in nonprofit and public agencies.

### **PADM 8641 - Thry/Prac Nonprofit Adm \*\***

**Credit Hours:** (3) **Description** Introduction to theoretical foundations, structures, and processes of nonprofit organizations; historical development and impact, social, political, legal, and economic environment in which nonprofit organizations exist; complexities of organizational governance shared by volunteer and professional staff decision-makers.

### **PADM 8642 - Res Dev Nonprofit Org \*\***

**Credit Hours:** (3) **Description** Introduction to various resources important to nonprofit organizations including financial support, volunteers, and community awareness, and to wide range of organization activities utilized for acquisition and maintenance of these resources. **PREREQUISITE(S):** Permission of instructor.

### **PADM 8643 - Semn Nonprofit Adm&Philanth**

**Credit Hours:** (3) **Description** Introduction to principles and practices of managerial and financial accounting in nonprofit organizations, including examining performance and financial condition; emphasis on making program choices and decisions using financial management concepts to further effective and accountable nonprofit administration.

### **PADM 8662 - Application/Public Serv**

**Credit Hours:** (3) **Description** Assessment of current administrative needs in government and nonprofit agencies, social capital theory, project management and organizational learning concepts, quality improvement of public administrative practice; applied, field-based experiences.

### **PADM 8663 - Issue Public Mgmt Policy**

**Credit Hours:** (3) **Description** Special issues of current interest that relate to planning, implementation, and evaluation of programs in public and nonprofit agencies; emphasis on policy analysis techniques.

### **PADM 8702 - Independent Study**

**Credit Hours:** (1-3) **Description** Independent investigation of research problems or directed readings in selected areas of public administration. May be repeated for a maximum of 6 credit hours.

### **PADM 8710-8719 - Special Topics in Public Administration**

**Credit Hours:** (1-3)

## **Public Health**

### **PUBH 6131 - Social Justice & Public Health**

**Credit Hours:** (3) **Description** This course introduces students to the concept of social justice as a public health construct. We will explore barriers to disease prevention opportunities, health care, and other impactors of health that are not equally distributed. We will examine methods for creating equal opportunities that improve population health. We also will examine the role of public health practitioners in implementing social justice principles in order to improve health outcomes. Minimum Grade of B-

### **PUBH 6868 - Global Refugee Crisis as a Public Health Concern**

**Credit Hours:** 3 **Description** This course aims to introduce the student to the problem of refugees worldwide, whether due to armed conflicts, persecution, or environmental threats. The course explains the importance of the refugee problem from public health point of view with a focus on main health issues related to refugee populations, as well as challenges it poses to host countries.

### **PUBH 7001 - Health Care Policy**

**Credit Hours:** (3)

### **PUBH 7002 - Comm Hlth Assessmt & Prog Plan \*\***

**Credit Hours:** (3) **Description** This course introduces students to the concepts and methods of community health assessment and the process of planning for health improvement. The course covers relevant community health topics including the nature of health and its determinants; the use of quantitative and qualitative methods to assess needs; data analysis; community mobilization and capacity building; and the impact of current national policy, including the Affordable Care Act, on community health improvement. Using secondary data, students will work in teams to develop elements of a community needs assessment for Shelby County. Findings and recommendations for community health improvement will be compiled into a final report.

### **PUBH 7004 - Interdis Approach PH Challenge**

**Credit Hours:** (3) **Description** Interdisciplinary Approaches to Population Health Challenges is designed to provide students with an interdisciplinary, team-based experience in improving the health of the local community. Students bring their unique perspectives from their major fields to identify and test potential solutions to public health challenges that are multi-causal. Students will apply disciplinary competencies to real world challenges. Students will examine social determinants of health, and structural, environmental, and systemic issues that impact population health within the context of health equity. **PREREQUISITE(S):** permission of instructor.

### **PUBH 7006 - Biostatistics in Data Mining**

**Credit Hours:** (3) **Description** Students will apply data mining techniques and predictive modeling using SAS Enterprise Miner. Students will learn how to gain practical skills in employing the SEMMA model development process and testing their prediction model using various management and mathematical techniques. **PREREQUISITE(S):** PUBH 7/8152 and PUBH 7/8190

### **PUBH 7014 - Public Health Communication**

**Credit Hours:** (3) *Cross listing* (same as COMM 7014-8014) **Description** Explores communication studies theory

and method that can be used to promote positive change in health concerns in public health care communication, including disseminating health information, health inequities, and health literacy.

### **PUBH 7104 - Large Data Sets/PUBH Research**

**Credit Hours:** (3) **Description** This course addresses secondary data analysis of health quality and outcomes issues. Secondary data analysis using large, public data sets will be examined. Issues related to secondary analysis and drawing items from multiple data sets will be discussed. Analytical techniques such as adjustments for missing data, transformations of data, and risk adjustment will be applied using public data sets.

### **PUBH 7120 - Environmental Health I \*\***

**Credit Hours:** (3) **Description** Introduces complex and interlinked environmental issues facing public health professionals; presents concepts, principles, and applications of natural and social science disciplines forming the basis of environmental health; introduces environmental issues relevant to health problems; develops communication skills by discussing public health issues and environmental policies.

### **PUBH 7122 - Environmental Health II**

**Credit Hours:** (3) **Description** This course focuses on specific cases of environmental hazards and related health problems. It also focuses on the applied aspect of sources of environmental data, methods of environmental data collection, risk assessment and use of such data for policy development and risk management.

### **PUBH 7124 - Environmental Toxicology \*\***

**Credit Hours:** (3) **Description** This course discusses basic principles governing the behavior and effects of toxic chemicals released into the environment; sources, distribution, and fate of toxic chemicals in the environment; chemicals and cancer and birth defects; government regulation of chemical hazards. Focus is on human health impacts of chemicals found in the workplace and general environment.

**PREREQUISITE(S):** SPED 3501 or SPED 6601;

### **PUBH 7125 - Environmental Health Microbiol**

**Credit Hours:** (3) **Description** This course provides introduction to foodborne and waterborne microbial disease including sources and routes of transmission of microbes from the environment to humans; identification of common water and foodborne pathogens and methods for their detection and surveillance; safe preservation and intervention methods to reduce microbial loads in food and water; regulatory aspects of prevention of foodborne disease and how information from surveillance is used to improve public health policy and practice. **PRE-REQUISITE:** one college level course in both biology and chemistry.

### **PUBH 7126 - Prin Exposure/Risk Assessmnt \*\***

**Credit Hours:** (3) **Description** Understanding of exposure and risk is a necessary application and of growing importance in environmental health studies. This course is designed to provide concepts, methods, models, statistics and theory necessary for the assessment of exposure to environmental agents and health risk from exposures. Topics to be covered include: the selection of study populations; identification and quantification of exposure pathways; the design of exposure assessment strategies; exposure measurement methods; risk assessment framework, modeling of health effects; and derivation of risk estimates. Specific examples of exposure and risk assessments will be analyzed and critiqued.

### **PUBH 7128 - Envrnmnt Policy/DecisionMaking \*\***

**Credit Hours:** (3) **Description** The course will present regulatory and non-regulatory approaches to the management of toxic substances in the environment, with emphasis on the scientific/technical basis for toxic substances control. It will examine approaches at the international level, in the European Union, and at the federal and state levels in the U.S. Overviews of each approach will be provided with the majority of the course dedicated to examination of the use of risk-based and public health-based approaches to toxicant control in regulatory as well as non-regulatory contexts. Topics that will be integrated into this examination include risk communication, risk perception, risk-benefit and cost-benefit analysis, and environmental justice. **PRE-REQUISITES:** 7124-8124 and 7126-8126

### **PUBH 7129 - Envrnmntl Sampling & Analysis \*\***

**Credit Hours:** (3) **Description** This is a graduate level laboratory and lecture course on principles, equipment, instrumentation, methodologies, and strategies for measuring

environmental chemical and biological contaminants. We will examine sampling techniques, analytical methods, quality assurance/quality control, and regulatory mandates applied to air, water and soil samples. It is designed for students in the environmental health sciences and other graduate students interested in occupational and ambient-environmental exposure assessments for regulatory compliance and risk estimation.

### **PUBH 7130 - Social Determinants of Health** \*\*

**Credit Hours:** (3) *Cross listing* (cross-listed with ECON 7710-ECON 8710) **Description** This course focuses on the systematic study of the economic and social conditions which determine health. It examines the social gradient in health and explores how social influences such as poverty, social capital, job security, neighborhood characteristics, social support, transportation, discrimination, and stress affect health and longevity. It also explores structural interventions in shaping social environments that are conducive to better health. **PRE-REQUISITE:** PUBH 7160/8160 OR PERMISSION OF INSTRUCTOR

### **PUBH 7131 - Social/Behavioral Policy Devel**

**Credit Hours:** (3) **Description** This course will introduce students to how theories and methods in the social and behavioral sciences are applied to the development and implementation of public policy aimed at health prevention and promotion. Several current primary and secondary prevention issues will be used as exemplars, including tobacco control, physical activity, injury control, and regulation of food supply. **NOTE:** PUBH graduate students may not use this course to fulfill degree requirements

### **PUBH 7132 - Health Program Evaluation \*\***

**Credit Hours:** (3) **Description** This graduate seminar provides qualitative and quantitative perspectives on health program evaluation. The course examines various models, theories, methods, and processes in evaluating community and public health programs. It is a practice-oriented course and facilitates students developing applied skills in the field of health program evaluation.

### **PUBH 7135 - Social Ntwrk Concepts in PUBH**

**Credit Hours:** (3) **Description** This course introduces students to the concepts of social networks and social relationships and how these factors are associated with health. Students will be provided with an overview of the history of social network research, social network constructs and measurements, and their application in health research and interventions. **PRE-REQUISITES:** PUBH 7150 AND PUBH 7160, OR PERMISSION OF INSTRUCTOR.

### **PUBH 7140 - Epidemiology of Chronic Diseases**

**Credit Hours:** (3) Former: (COMM 7014-8014) **Description** This course is designed to provide graduate students with knowledge on major chronic diseases and skill on applying various epidemiologic methods to design and conduct epidemiological studies on chronic diseases. The course covers selected topics in chronic disease with critical analysis of the current epidemiologic literature.

### **PUBH 7141 - Epidemiologic Survey Method** \*\*

**Credit Hours:** (3) **Description** This course provides students in Public Health with the basic elements in designing and performing survey research. The course describes the initial steps in formulating and focusing the research question and proceeds to the key steps in performing survey research, i.e., identifying the target population, obtaining an appropriate sample, designing the survey instrument and implementing it.

### **PUBH 7150 - Biostatistical Methods I \*\***

**Credit Hours:** (3) **Description** Introduces elementary methods for presenting public health data in summary form and analyzing data; not a mathematics course and will not stress derivations of formulae; instead, emphasizes the application of statistical ideas and methods to the design and interpretation of public health studies.

### **PUBH 7152 - Biostatistical Methods II \*\***

**Credit Hours:** (3) **Description** This course is the second course in Biometric statistics for public health research. It is intended for advanced students in public health who are interested in gaining expertise in advanced Biometric data analysis. You will be introduced to Biometric statistical modeling techniques commonly used in public health as well as analysis procedures using SPSS and SAS computer software.

## PUBH 7153 - Biostat. in Bioinformatics

**Credit Hours:** (3) **Description** This course is offered every other year to Master (7000 level) and Doctoral (8000 level) students. This course focuses on statistical methods in application to bioinformatics data and other large data sets with similar features. Students will be introduced to R programming, a commonly used programming language implemented in bioinformatics data analyses. This will be an applied course with focus on learning the methods, applying the methods, and programming in R.

## PUBH 7155 - IBM SPSS & Data Management

**Credit Hours:** (3) **Description** Designed to introduce SPH students to programming and data structure topics they would be expected to know when using SPSS in their coursework or job. Please note that this is not a statistics course so statistical programming or statistical procedures will not be covered. All programming topics will be demonstrated using public health data sets.

## PUBH 7160 - Soc/Behav Science Principles \*\*

**Credit Hours:** (3) **Description** This graduate level course will focus on the contribution of social and behavioral sciences to the understanding of the distribution, etiology, and solution of public health problems. The theoretical underpinnings of the most relevant explanation, planning, change, and evaluation theories will be reviewed in depth and illustrated with examples of the application of these models to health promotion and disease prevention with individuals, groups and communities. **PREREQUISITE(S):** Permission of instructor.

## PUBH 7161 - Health Behavior Theories

**Credit Hours:** (3) **Description** This course provides a multidisciplinary theoretical approach to the study of health and health behavior. Emphasis is on the use of psychosocial theories in health-related practice, policy-making, and research. Other theoretical perspectives, such as the ecological and biopsychosocial models, are addressed in order to integrate these theoretical perspectives.

## PUBH 7165 - PUBH Approaches to HIV/AIDS

**Credit Hours:** (3) **Description** This course introduces students to critical issues in HIV/AIDS prevention in diverse community settings using an ecological perspective to understand how multiple levels of influence contribute to HIV/AIDS disparities. Social determinants of HIV/AIDS/STI transmission will be addressed. The course will integrate various approaches to eliminating HIV/AIDS disparities including community-based participatory research, faith-based initiatives, and community-based methods.

## PUBH 7170 - Epidemiology in PUBH I\*\*

**Credit Hours:** (3) **Description** Provides foundation needed to interpret, use, and research epidemiological data; focuses on methodological aspects of epidemiology as it applies to investigation of public health problems and guidance of public health planning and policies. May be repeated for up to 6 hours

## PUBH 7172 - Epidemiology PUBH II \*\*

**Credit Hours:** (3) **Description** This course is designed for epidemiology majors and other students requiring a more thorough knowledge of the concepts and methods used in epidemiological research. This course stresses analytical study designs and etiologic research. Topics include exposure-disease associations, threats to internal validity and their control, and valid interpretation of study results, including concepts of association, causality, and effect modification. **PRE-REQUISITES:** PUBH 7150 AND PUBH 7170, OR PERMISSION OF INSTRUCTOR

## PUBH 7174 - Epidemiology PUBH III

**Credit Hours:** (3) **Description** This course is designed for doctoral and advanced master's degree students. The course focuses on the nature of causality in biological systems and the methods by which it may be determined. The course also focuses on extracting, organizing and interpreting various evidence to support public health and medical practices. Both observational and experimental study designs are considered. Landmark studies from the epidemiologic literature will be extensively used to illustrate these issues. **PRE-REQUISITES:** PUBH 7150, PUBH 7170, AND PUBH 7172, OR PERMISSION OF INSTRUCTOR.

## PUBH 7175 - Lab Tech in Molecular Epi

**Credit Hours:** (3) **Description** 7000/8000 level; Lecture/Lab Hours: 3 contact hours (2-5 pm)/week May be repeated with change in topic for 9 credits

## PUBH 7180 - Foundations of PUBH \*\*

**Credit Hours:** (3) **Description** Provides foundation for critical analysis of current public health issues, facilitating discussion of contemporary issues and challenges of public health policy and practice; key topics include balancing individual and societal rights; public health ethics; health disparities; cultural competence, socio-ecologic approaches to promote health; public health concerns in urban communities; and current public health practice. May be repeated for a maximum of 12 credit hours **PREREQUISITE(S):** Permission of instructor.

## PUBH 7190 - Adv SAS for PUBH Prof 1

**Credit Hours:** (3) **Description** This class introduces students to advanced SAS programming statements and techniques using the SAS system software.

## PUBH 7191 - Adv SAS for PUBH Prof II

**Credit Hours:** (3) **Description** This class introduces students to advanced SAS programming language statements and methods specifically for data management and reporting. Students will learn methods and techniques to identify data errors, use methods for data entry, maintain analytical data sets and summarize clinical/medical encounter data. This class is a continuation of PUBH 7190-8190.

## PUBH 7192 - Intro to Human Disease for PH

**Credit Hours:** (3) **Description** This course introduces pathophysiology of major human diseases relevant to public health professionals. The course materials will be discuss from a public health perspective that focuses on mechanisms and progression of diseases, pathophysiologic associations with risk factors, structural changes, and the applications of this knowledge in disease prevention in public health.

## PUBH 7300 - Spatial Anlysis/Sim for UrbnHlth \*\*

**Credit Hours:** (3) **Description** The use of spatial analysis and simulation has become increasingly common in the study of urban health problems. This course aims to provide graduate students the framework and basic concepts of spatial epidemiology, health geography and system sciences. Students are expected to understand and be able to apply the major methods from spatial analysis, GIS, and Agent-based model for health problems. The spatial analysis and simulation

methods will be learned within the context of urban health, focusing on urban environment and health disparities. Students will apply and integrate various methods collectively for a selected project.

## PUBH 7305 - Quant Meth Review Rsch

**Credit Hours:** (3) **Description** (same as PSYC 7305-8305). This course focuses on quantitative strategies for reviewing research findings in the social sciences. These quantitative review techniques (often referred to as "meta-analysis") can help investigators summarize and resolve conflicts in past research. The course should be particularly useful to graduate students who are planning to conduct literature review as part of a research project, master's thesis, or doctoral dissertation. **PRE-REQUISITES:** Students enrolled in this course are expected to have completed PSYC 7302/8302 or an equivalent graduate-level statistics course, and to have a basic understanding of the analysis of variance and multiple regression.

## PUBH 7306 - Linear Struct Modeling

**Credit Hours:** (3) **Description** (PSYC 7306-8306). The purpose of this course is to provide students with an introduction to structural equation modeling (SEM). An emphasis will be placed on helping students use/apply SEM methodology to answer research questions in their areas of interest. After completing this course, students should be able to (1) conduct structural equation analyses using SAS, AMOS, and Mplus, (2) communicate results of structural equation analyses in both written and verbal form, (3) evaluate strengths and limitations of studies employing SEM techniques, and (4) provide consultation to colleagues on SEM related issues. **PRE-REQUISITES:** PUBH 7152 OR EQUIVALENT.

## PUBH 7307 - App Struct Equ Modeling in PH

**Credit Hours:** (3) **Description** This course will provide knowledge about the fundamentals of structural equation modeling, and its practical applications in public health. It will provide details of structural equation modeling, from statistical concepts to how to perform various types of structural equation analyses. Topics will include covariance structures, path diagrams, path analysis, model identification, model testing with emphasis on confirmatory factor analysis and invariance testing. Statistical software recommended for this course are SAS and SPSS AMOS.

## PUBH 7308 - Appl Multivariate Stat

**Credit Hours:** (3) **Description** (PSYC 7308-8308). Covers multivariate analysis of variance (MANOVA) with independent designs and extensions to repeated measures and ANOVA. Goals include review of conceptual bases, learning SPSS and SAS procedures, learning analysis of simple and complex designs, and learning special post-hoc procedures. PRE-REQUISITES: PUBH 7152/8152 OR EQUIVALENT.

### **PUBH 7309 - Appl Surv Analys in Pub Hlth**

**Credit Hours:** (3) **Description** This course will cover the statistical concepts and techniques that are useful in the field of public health for the analysis of survival data or time to event data. The course will examine the features unique to survival data which distinguishes these data from other more familiar types of data. Topics include survival functions, hazard rates, types of censoring and truncation. Methods will include life tables, Kaplan-Meier plots, log-rank tests, Cox regression models, and Inference for parametric regression models. Statistical software recommended for this course are SAS and SPSS. May be repeated with change of topic.

### **PUBH 7310 - Mixed Model Regression Analys**

**Credit Hours:** (3) **Description** Instruction in the use of mixed-model regression with a focus on design and analysis of group-randomized trials; attention also given to analysis of data from surveys based on cluster sampling, longitudinal studies, and studies involving matching. Same as PSYC 7310-8310. may be repeated with different topics

### **PUBH 7311 - Appl Categorical Data Analys**

**Credit Hours:** (3) **Description** Instruction includes tabular, logistic, and Poisson and Cox regression, as well as interpretation of SAS output. For advanced students in psychology, education, and public health pursuing a career in research. Same as PSYC 7311-8311.

### **PUBH 7333 - Addictive Behaviors**

**Credit Hours:** (3) **Description** This course provides public health students with an introduction to the historical, clinical, epidemiological, and public policy issues related to addictive behaviors, including alcohol, tobacco, illicit drugs, and gambling. Students will be exposed to a variety of methodological approaches used by social and behavioral scientists to study addictive behaviors, including ethnography, surveys, geographical information systems, and clinical trials.

### **PUBH 7334 - Comm Based Part Resrch Mthds**

**Credit Hours:** (3) **Description** This course familiarizes students with key historical underpinnings of community based participatory research (CBPR), principles of CBPR practice, and methodological considerations in building community partnerships; community assessment; issue analysis; research planning; data gathering; and data sharing. The course will also address cultural competence; working with diverse populations; ethical considerations; as well as funding and Institutional Review Board issues. Lecture/Lab Hours: 3 contact hours (2-5 pm)/week.

### **PUBH 7335 - Struct/Environ Iss/Urban Comm \*\***

**Credit Hours:** (3) **Description** This course focuses on concepts of risk and burden of disease in urban communities. It examines contemporary issues and challenges of the social, cultural, built, and physical environments of urban communities. Key topics include public health and urban health; roots of health inequality; risk and burden of disease; stress, socio-economic and structural influences on health; and community-based approaches (CBPR) to address public health concerns in urban communities.

### **PUBH 7336 - Women's Health**

**Credit Hours:** (3) **Description** This course examines topics in women's health in the United States; the programs, services, and policies that affect women's health; and methodological issues in research about women's health. the epidemiology, measurement and interpretation of these factors, and how these factors can be translated into interventions, programs, and policy, will be of major interest.

### **PUBH 7337 - Public Health Nutrition**

**Credit Hours:** (3) **Description** This course examines dietary intake and nutrition behaviors from a public health perspective. Topics covered include dietary intake measurement for the monitoring of population health; socioecological factors impacting eating behaviors from infancy into adulthood; and the role of diet in the development of diseases with public health implications (e.g., obesity, malnutrition).

### **PUBH 7338 - Critical Issues in Global Hlth \*\***



**Credit Hours:** (3) **Description** This course focuses on critical issues in global health emphasizing the multidisciplinary approach to understanding global health problems as they occur within and across borders. Concepts include the interplay between global stressors such as population, urbanization, economics, environment, and war; and their effects on the spread of infectious and chronic diseases, nutrition, and environmental health.

### **PUBH 7339 - Transl Rsrch Meth Pop Hlth**

**Credit Hours:** (3) *Cross listing* (same as PSYC 7305-PSYC 8305) **Description** This course covers methods to plan, design and evaluate the potential translatability and public health impact of prevention interventions. Methodological issues to be considered include reach, representativeness, adoption, implementation, adaptation, impact, scalability, and sustainability of interventions. Measurement and metrics to assess these elements and evaluate their impact will be included.

### **PUBH 7340 - Behavioral Intervention Develop \*\***

**Credit Hours:** (3) Former: (PSYC 7306-8306) **Description** This course provides training in the development of theory-based behavioral interventions that are relevant to public health research and practice. Focuses on community and population level strategies and methods.

### **PUBH 7341 - Physical Activity/Public Hlth**

**Credit Hours:** (3) **Description** This course is an overview of physical activity programming and interventions within the public health framework. Students will study issues germane to physical activity and public health; acquire knowledge of current research, best practices, guidelines and recommendations for physical activity; and develop skills integral to the design, implementation, and evaluation of public health programs that are intended to promote physical activity in specific populations.

### **PUBH 7342 - Epidemiology Min/Ethnic Pop**

**Credit Hours:** (3) Former: (PSYC 7308-8308) **Description** This course provides an evidence-based approach to the study of the epidemiology and health disparities of racial and ethnic groups in the U.S. Emphasis is placed on historical events and immigration policies that have contributed to the prominent size of these populations, identification of data sources to describe this demographic imperative and health status, and on

socio-political, cultural, and religious influences that inform public policy on health disparities.

### **PUBH 7343 - Tobacco Use: Cause, Conseq, Ctrl**

**Credit Hours:** (3) **Description** 3

### **PUBH 7345 - Health Literacy**

**Credit Hours:** (3) *Cross listing* (Same as PSYC 7310-PSYC 8310, COMM 7345-COMM 8345). **Description** This course introduces students to health literacy models and research from a health communication perspective. We explore the impact of health literacy on access to care, vulnerable populations, management of chronic illness, mental health, healthcare costs, caregiver and stakeholder health literacy, and other current issues.

### **PUBH 7346 - Public Mental Health**

**Credit Hours:** (3) *Cross listing* (Same as PSYC 7311-PSYC 8311) **Description** This course provides an overview of mental health issues from a public health perspective. Topics include differentiating mental health from mental illness, socio-economic disparities in mental illness, community-based services for the diagnosis, treatment, and prevention of prevalent mental illnesses, and major mental health policy issues in the United States.

### **PUBH 7347 - Qualitative Mtds Hlth Research**

**Credit Hours:** (3) **Description** This course provides an overview of qualitative research methods commonly used in health related research, including the basic skills needed for data collection and analysis and an understanding of philosophical and epistemological roots. Students will learn to develop and critique a qualitative research proposal in terms of design, technique, analysis and interpretation.

### **PUBH 7348 - Hlth Equity, Cult Comp, Soc Just**

**Credit Hours:** (3) **Description** 3

### **PUBH 7373 - Planetary and Environmental Epidemiology**

**Credit Hours: 3** **Description** Except for the sunlight, humans get everything from planet Earth's materials and processes. Global climate change impacts all systems of our Earth, including the geosphere, hydrosphere, atmosphere, cryosphere, and biosphere. Earth processes and systems influence our surrounding environments' pollution and contamination that influence human health. Anthropogenic activities, unsustainable dependency, and resource extraction from nature disrupt planet Earth's health and subsequently human health. This course will help students to look at environmental pollution and human health through the lens of disruption in interconnected earth systems. Planetary and environmental variables are often exposures to disease development and progression, but also can modify the relationship between other exposures and health outcomes. Students will also learn to use epidemiological tools to explore how planetary exposures and systems influence, modify and mediate the relationship between disease exposure and health outcomes.

### **PUBH 7400 - Special Problems**

**Credit Hours: (3)** **Description** Independent investigation of a research problem or directed readings, in a selected area of public health chosen in consultation with the instructor. Only six hours of credit may be applied to a degree. May be repeated for a maximum of 6 credits.

### **PUBH 7401 - Applied Field Epidemiology**

**Credit Hours: (3)** **Description** This course is designed to introduce students to the knowledge, skills and abilities necessary for conducting field epidemiology investigations and outbreak investigations they will be expected to manage as public health professionals working in local health department settings. Topics covered will include surveillance and outbreak detection; designing field investigations; selecting appropriate comparison groups; hypothesis generation and analytic studies; introducing public health control measures; conducting multijurisdictional investigations; and communicating findings.

### **PUBH 7442 - Cancer Epidemiology**

**Credit Hours: (3)** **Description** The course concentrates on distribution and trends of incidence, mortality and survival of major cancer types. It also discusses in depth current theories of cancer etiology, including radiation, tobacco, alcohol, drugs, occupation and other environmental, biologic and behavioral factors. Special issues of epidemiological research in cancer, such as study design, issues related to abstracting information from medical and other records and retrospective

assessment of exposures will also be emphasized. **PRE-REQUISITES:** PUBH 7150 AND PUBH 7170, OR PERMISSION OF INSTRUCTOR.

### **PUBH 7443 - Infectious Disease Epidemiology \*\***

**Credit Hours: (3)** **Description** This course is designed to introduce students to the basic concepts in infectious disease epidemiology. Topics include history and major concepts of infectious disease epidemiology, investigating new outbreaks, emerging infectious disease and bioterrorism. Measures for controlling infectious disease, such as surveillance, vaccination, and vector control will be taught. Major infectious diseases will be discussed in some detail, including HIV/AIDS, TB, Malaria, and Flu. **PRE-REQUISITES:** PUBH 7150 AND PUBH 7170, OR PERMISSION OF INSTRUCTOR.

### **PUBH 7444 - PUBH Surveillance Fundamentals**

**Credit Hours: (3)** **Description** This course covers topics related to the systematic collection, analysis, and interpretation of health outcomes for use in planning, implementation, reporting, and evaluation of public health. Additional topics include basic concepts and procedures of sample designs, graphical techniques, and statistical methods of population sampling.

### **PUBH 7445 - Genetic Epidemiology**

**Credit Hours: (3)** **Description** This course will serve as a basic introduction to genetic epidemiology and its application in research. Basic concepts of human genetics will be introduced, and the research methods used to study the genetic basis of disease will be presented. Research methods discussed will include family based studies such as twin studies and affected sib pair linkage analyses, and candidate gene methods such as case-control, cohort and transmission/disequilibrium test. Gene-environment and gene-gene interaction will also be discussed. The course will conclude with a discussion of ethical issues around genetic epidemiology, current research and future directions. **PRE-REQUISITES:** PUBH 7150 AND PUBH 7170, OR PERMISSION OF INSTRUCTOR.

### **PUBH 7447 - Public Health Genomics**

**Credit Hours: (3)** **Description** This course introduces students to the field of public health genomics through providing an overview of the field and evaluating challenges

associated with the translation of genomic information into public health practices. The course materials will be presented on selected topics including: historical background of the field, genetic testing and counseling, communication of genomic information to public, using genomic information in disease prevention and health promotion efforts, genomic information in health care practices, ethical issues, genetics and race/health disparities, and implications of genomic information for communities.

### **PUBH 7450 - Randomized Clinical Trials I**

**Credit Hours:** (3) **Description** The purpose of this course is to provide students with a thorough grounding in the conduct of randomized clinical trials (RCTs) including design, management, evaluation, and resource acquisition. Emphasis is placed on RCTs that are relevant to public health research and practice.

### **PUBH 7455 - Clinical Trials II**

**Credit Hours:** 3 **Description** This course provides students with solid understanding of the statistical approaches used in the design, conduct, and analysis of clinical trials.

**PREREQUISITE(S):** PUBH 7-8150 (Biostatistics II) or equivalent, and PUBH 7-8450 (Randomized Clinical Trials I). Students outside of UoM's Public Health program are welcome but *must* obtain permission from the course instructor.

### **PUBH 7460 - Advanced Survival Analysis**

**Credit Hours:** 3 **Description** This is the second course in survival analysis for public health research. It is intended for advanced students in public health pursuing a career in the area of public health and who are interested in gaining expertise in advanced methods for survival data or time to event data. As survival models are used throughout medical and public health related fields, we will focus on applications and methodologies beyond the scope of Applied Survival Analysis (PUBH 7/8309) and emphasis on data analysis, interpretations, and the underlying statistical theory. You will be introduced to statistical modeling techniques commonly used in public health as well as analysis procedures using SAS software. **PREREQUISITE(S) or COREQUISITE(S):** PUBH 7-8309 (Applied Survival Analysis) or equivalent. Students outside of UoM's Public Health program are welcome but *must* obtain permission from the course instructor.

### **PUBH 7470 - Community and Population Health Dashboards**

**Credit Hours:** 3 **Description** This course will introduce students to the importance of visualizing community and population health data in addressing health inequity. Students will also be introduced to the concepts of visualization literacy, storytelling with data, and the importance of presenting data in a meaningful format that is easy to understand. Students will gain knowledge of the design principles for population health dashboards and acquire skills to identify the right visualization techniques to display population health data.

### **PUBH 7472 - Digital Health Interventions and Evaluations**

**Credit Hours:** 3 **Description** This course will provide students with an understanding of digital health interventions to improve population health outcomes. Students will acquire hands on skills in areas of informatics enabled solutions such as self-care management, personal health record (PHR), and decision support tools to enhance healthcare delivery. The students will also acquire knowledge and skills to explore factors influencing the adoption and utilization of digital health applications to improve population health outcomes. The course will also cover topics related to public health innovations, sustainability, and entrepreneurship in health technologies. Future challenges, and opportunities related to applications of population health informatics will also be discussed.

### **PUBH 7474 - Principles of Population Health Informatics**

**Credit Hours:** 3 **Description** This course will provide students with an introduction to the fundamentals of population health informatics, its history, relevant concepts, and related informatics domains. The course will further describe the fundamentals of data, information and knowledge principles, information architecture of population health systems and role of data standards in the development of population health information systems. Students will be introduced to the concepts of population health data, and other emerging technological innovations that can contribute to the improvement of population health. The course will also provide students with a knowledge of issues related to privacy, security and confidentiality related to health data collection, storage, and its processing.

### **PUBH 7501 - Health Systems Organizations**

**Credit Hours:** (3) **Description** This course focuses on issues that contribute to assessing and improving the quality of health systems and services, including: institutional reforms and

capacity building, politics and governance, health system financing, public/private partnerships, and building community capacity. The course will emphasize how problems come to be recognized and defined, their characteristics and magnitude, and plans and programs to alleviate them. Students will be taught to understand health system characteristics, problems, policies and management and to champion solutions to structural and behavioral challenges in the health care system.

### **PUBH 7502 - Hlth Policy, Theory & Methods**

**Credit Hours:** (3) **Description** This course utilizes a multi-level approach to public health by providing a comprehensive overview of the health effects, history, marketing, politics, and control of tobacco use, combining medical, psychosocial, epidemiological and economic perspectives to give students a framework for understanding tobacco addiction and its prevention and treatment.

### **PUBH 7503 - Health Systems Decision-Making**

**Credit Hours:** (3) *Cross listing* (Same as COMM 7345-COMM 8345) **Description** This course addresses decision-making processes associated with managing risk in healthcare organizations in multiple healthcare settings. Students will examine and evaluate the quality of risk management decisions for program-level decisions as well as for addressing enterprise-wide risks. Students will learn to structure challenging decision problems using critical thinking, to gather information, develop alternatives based upon organizational values, mission, and objectives, and determine the best course of action.

### **PUBH 7504 - IT & Organizational Change**

**Credit Hours:** (3) **Description** This course will focus on electronic medical records, and the potential for health IT to improve quality; the economics of healthcare IT; theories of diffusion of innovations; theories of the relationship between healthcare IT, and behavior, practice and healthcare organizational changes; the costs and benefits of healthcare IT in costs, benefits and quality improvement; and alternative health policy approaches to hasten IT adoption in health care.

### **PUBH 7505 - Aging, Pub Hlth, & Hlth Svs**

**Credit Hours:** (3) **Description** 3

### **PUBH 7601 - PUBH Preparedness & Response**

**Credit Hours:** (3) **Description** This course will introduce the organizational structure of emergency management and the specific role of public health emergency management in preparedness and response. Key topics include the common framework for emergency response, public health law, public health surveillance tools, and health concerns of vulnerable populations.

### **PUBH 7603 - PUBH Emergency Response Ldrshp \*\***

**Credit Hours:** (3) **Description** This course will identify the range of hazards that public health emergency managers must confront in order to understand the public health consequences and create the plans that guide us through our response. Key topics include leadership and mitigation strategies that can reduce morbidity and mortality resulting from disasters.

### **PUBH 7604 - Res Methods in Soc/Behav Sci**

**Credit Hours:** (3) **Description** This course provides a comprehensive introduction to step-by-step research process, including research design, data collection, interpretation, and guidelines for writing and presenting results in social and behavioral sciences. It covers a range of research methods, including observational techniques, survey research, focus groups, and other types of unstructured data collection methods. Emphasis is placed on understanding the strengths, weaknesses, and underlying logic of different procedures for obtaining empirical evidence for rigorous population health research.

### **PUBH 7605 - Built Environment and PH**

**Credit Hours:** (3) **Description** This interdisciplinary course focuses on increasing recognition that the built environment, including all of the physical parts where we live and work, and community features such as sidewalks, trails and public transit can impact human health. Key topics include neighborhoods, physical activity, and diet; active transportation; disparity by race/ethnicity and income levels; social determinants; and policy interventions.

### **PUBH 7623 - Spatial Health Inequalities**

**Credit Hours:** (3) *Cross listing* (same as ESCI 7623 - ESCI 8623). **Description** Application of GIS and Spatial Analysis to

the study of health inequalities. **PREREQUISITE(S):** ESCI 4515 - ESCI 6515 or permission of instructor.

### **PUBH 7710 - HealthCare Economics**

**Credit Hours:** (3) **Description** (cross-listed with ECON 7710-8710) Applies basic economic concepts to analyze health care market and evaluate health policies; including distinctive economic characteristics of health, health care industry, and health care professionals; American system of health care; current health care policy issues such as health care reform, managed care, and manpower planning.

### **PUBH 7880 - Leadership Skills for GA**

**Credit Hours:** (3) **Description** Overview and practical demonstrations of leadership skills to enhance professional development for graduate assistants. NOTE: PUBH graduate students may not use this course to fulfill degree requirements.

### **PUBH 7985 - Practicum/Field Experience \*\***

**Credit Hours:** (3)

### **PUBH 7992 - Master's Project Seminar \*\***

**Credit Hours:** (3) **Description** Capstone course for the MPH program, drawing from all previous learning in the program. Students identify a public health problem, develop a format for intervention, conduct the intervention, and evaluate program success; requires formal report and oral presentation.

### **PUBH 7996 - Thesis**

**Credit Hours:** (1-6) **Description** Grades of S, U, or IP will be given.

### **PUBH 8006 - Biostatistics in Data Mining**

**Credit Hours:** (3) **Description** Biostatistics in Data Mining is a first course in applying data mining techniques and predictive modeling using SAS Enterprise Miner. Students will learn how to gain practical skills in employing the SEMMA model development process and testing their prediction model using various management and mathematical techniques. **PREREQUISITE(S):** PUBH 7152 - PUBH 8152 and PUBH 7190 - PUBH 8190

### **PUBH 8014 - Public Health Communication**

**Credit Hours:** (3) **Cross listing** (same as COMM 7014-COMM 8014). **Description** Explores communication studies theory and method that can be used to promote positive change in health concerns in public health care communication, including disseminating health information, health inequities, and health literacy.

### **PUBH 8104 - Large Data Sets/PUBH Research**

**Credit Hours:** (3) **Description** This course addresses secondary data analysis of health quality and outcomes issues. Secondary data analysis using large, public data sets will be examined. Issues related to secondary analysis and drawing items from multiple data sets will be discussed. Analytical techniques such as adjustments for missing data, transformations of data, and risk adjustment will be applied using public data sets.

### **PUBH 8120 - Environmental Health I**

**Credit Hours:** (3) **Description** This doctoral course introduces complex and interlinked environmental issues facing public health professionals; presents concepts, principles, and applications of natural and social science disciplines forming the basis of environmental health; introduces environmental issues relevant to health problems; develops communication skills by discussing public health issues and environmental policies.

### **PUBH 8122 - Environmental Health II**

**Credit Hours:** (3) **Description** This course focuses on specific cases of environmental hazards and related health problems. It also focuses on the applied aspect of sources of environmental data, methods of environmental data collection, risk assessment and use of such data for policy development and risk management.

### **PUBH 8124 - Environmental Toxicology**

**Credit Hours:** (3) **Description** This course discusses basic principles governing the behavior and effects of toxic chemicals released into the environment; sources, distribution, and fate of toxic chemicals in the environment; chemicals and cancer and birth defects; government regulation of chemical hazards. Focus is on human health impacts of chemicals found in the workplace and general environment.

### **PUBH 8125 - Environmental Health Microbiol**

**Credit Hours:** (3) **Description** This course provides introduction to foodborne and waterborne microbial disease including sources and routes of transmission of microbes from the environment to humans; identification of common water and foodborne pathogens and methods for their detection and surveillance; safe preservation and intervention methods to reduce microbial loads in food and water; regulatory aspects of prevention of foodborne disease and how information from surveillance is used to improve public health policy and practice. **PRE-REQUISITE:** one college level course in both biology and chemistry.

### **PUBH 8126 - Prin Exposure/Risk Assessmnt**

**Credit Hours:** (3) **Description** Understanding of exposure and risk is a necessary application and of growing importance in environmental health studies. This course is designed to provide concepts, methods, models, statistics and theory necessary for the assessment of exposure to environmental agents and health risk from exposures. Topics to be covered include: the selection of study populations; identification and quantification of exposure pathways; the design of exposure assessment strategies; exposure measurement methods; risk assessment framework, modeling of health effects; and derivation of risk estimates. Specific examples of exposure and risk assessments will be analyzed and critiqued.

### **PUBH 8128 - Envrnmnt Policy/DecisionMaking**

**Credit Hours:** (3) **Description** The course will present regulatory and non-regulatory approaches to the management of toxic substances in the environment, with emphasis on the scientific/technical basis for toxic substances control. It will examine approaches at the international level, in the European Union, and at the federal and state levels in the U.S. Overviews of each approach will be provided with the majority of the course dedicated to examination of the use of risk-based and public health-based approaches to toxicant control in regulatory as well as non-regulatory contexts. Topics that will be integrated into this examination include risk communication, risk perception, risk-benefit and cost-benefit analysis, and environmental justice. **PRE-REQUISITES:** 7124-8124 and 7126-8126

### **PUBH 8129 - Envrnmntl Sampling & Analysis**

**Credit Hours:** (3) *Cross listing* (cross-listed with ECON 7710-ECON 8710) **Description** This is a graduate level laboratory and lecture course on principles, equipment,

instrumentation, methodologies, and strategies for measuring environmental chemical and biological contaminants. We will examine sampling techniques, analytical methods, quality assurance/quality control, and regulatory mandates applied to air, water and soil samples. It is designed for students in the environmental health sciences and other graduate students interested in occupational and ambient-environmental exposure assessments for regulatory compliance and risk estimation.

### **PUBH 8130 - Social Determinants of Health**

**Credit Hours:** (3) **Description** This course focuses on the systematic study of the economic and social conditions which determine health. It examines the social gradient in health and explores how social influences such as poverty, social capital, job security, neighborhood characteristics, social support, transportation, discrimination, and stress affect health and longevity. It also explores structural interventions in shaping social environments that are conducive to better health. **PRE-REQUISITE:** PUBH 7160/8160 OR PERMISSION OF INSTRUCTOR

### **PUBH 8131 - Social/Behavioral Policy Devel**

**Credit Hours:** (3) **Description** This course will introduce students to how theories and methods in the social and behavioral sciences are applied to the development and implementation of public policy aimed at health prevention and promotion. Several current primary and secondary prevention issues will be used as exemplars, including tobacco control, physical activity, injury control, and regulation of food supply.

### **PUBH 8132 - Health Program Evaluation**

**Credit Hours:** (3) **Description** This graduate seminar provides qualitative and quantitative perspectives on health program evaluation. The course examines various models, theories, methods, and processes in evaluating community and public health programs. It is a practice-oriented course and facilitates students developing applied skills in the field of health program evaluation.

### **PUBH 8135 - Social Ntwrk Concepts in PUBH**

**Credit Hours:** (3) **Description** This course introduces students to the concepts of social networks and social relationships and how these factors are associated with health.

Students will be provided with an overview of the history of social network research, social network constructs and measurements, and their application in health research and interventions. PRE-REQUISITES: PUBH 7150 AND PUBH 7160, OR PERMISSION OF INSTRUCTOR.

### **PUBH 8140 - Epidemiology of Chronic Diseases**

**Credit Hours:** (3) **Description** This course is designed to provide graduate students with knowledge on major chronic diseases and skills on applying various epidemiologic methods to design and conduct epidemiological studies on chronic diseases. The course covers selected topics in chronic disease with critical analysis of the current epidemiologic literature.

### **PUBH 8141 - Epidemiologic Survey Method**

**Credit Hours:** (3) **Description** This course provides students in Public Health with the basic elements in designing and performing survey research. The course describes the initial steps in formulating and focusing the research question and proceeds to the key steps in performing survey research, i.e., identifying the target population, obtaining an appropriate sample, designing the survey instrument and implementing it.

### **PUBH 8150 - Biostatistical Methods I**

**Credit Hours:** (3) **Description** Introduces elementary methods for presenting public health data in summary form and analyzing data; not a mathematics course and will not stress derivations of formulae; instead, emphasizes the application of statistical ideas and methods to the design and interpretation of public health studies.

### **PUBH 8152 - Biostatistical Methods II**

**Credit Hours:** (3) **Description** This course is the second course in Biometric statistics for public health research. It is intended for advanced students in public health who are interested in gaining expertise in advanced Biometric data analysis. You will be introduced to Biometric statistical modeling techniques commonly used in public health as well as analysis procedures using SPSS and SAS computer software.

### **PUBH 8153 - Biostat. in Bioinformatics**

**Credit Hours:** (3) **Description** This course is offered every other year to Master (7000 level) and Doctoral (8000 level) students. This course focuses on statistical methods in

application to bioinformatics data and other large data sets with similar features. Students will be introduced to R programming, a commonly used programming language implemented in bioinformatics data analyses. This will be an applied course with focus on learning the methods, applying the methods, and programming in R.

### **PUBH 8155 - SPSS for Health Research**

**Credit Hours:** (1) **Description** designed to introduce SPH students to programming and data structure topics they would be expected to know when using SPSS in their coursework or job. Please note that this is not a statistics course so statistical programming or statistical procedures will not be covered. All programming topics will be demonstrated using public health data sets.

### **PUBH 8156 - SAS for Health Research**

**Credit Hours:** (1) **Description** designed to introduce SPH students to programming topics they would be expected to know when using SAS in their coursework or job. SAS is a very complex, sophisticated application so we will concentrate on the simple basics. This is strictly an applied course with obvious emphasis on using SAS Information Delivery Software, mainly SAS/base.

### **PUBH 8160 - Soc/Behav Science Principles**

**Credit Hours:** (3) **Description** This graduate level course will focus on the contribution of social and behavioral sciences to the understanding of the distribution, etiology, and solution of public health problems. The theoretical underpinnings of the most relevant explanation, planning, change, and evaluation theories will be reviewed in depth and illustrated with examples of the application of these models to health promotion and disease prevention with individuals, groups and communities.

### **PUBH 8161 - Health Behavior Theories**

**Credit Hours:** (3) **Description** This course provides a multidisciplinary theoretical approach to the study of health and health behavior. Emphasis is on the use of psychosocial theories in health-related practice, policy-making, and research. Other theoretical perspectives, such as the ecological and biopsychosocial models, are addressed in order to integrate these theoretical perspectives.

### **PUBH 8165 - PUBH Approaches to HIV/AIDS**

**Credit Hours:** (3) **Description** This course introduces students to critical issues in HIV/AIDS prevention in diverse community settings using an ecological perspective to understand how multiple levels of influence contribute to HIV/AIDS disparities. Social determinants of HIV/AIDS/STI transmission will be addressed. The course will integrate various approaches to eliminating HIV/AIDS disparities including community-based participatory research, faith-based initiatives, and community-based methods.

**PREREQUISITE(S):** Permission of instructor

### **PUBH 8170 - Epidemiology in PUBH I**

**Credit Hours:** (3) **Description** This doctoral level course provides foundation needed to interpret, use, and research epidemiological data; focuses on methodological aspects of epidemiology as it applies to investigation of public health problems and guidance of public health planning and policies.

### **PUBH 8172 - Epidemiology PUBH II**

**Credit Hours:** (3) **Description** This course is designed for epidemiology majors and other students requiring a more thorough knowledge of the concepts and methods used in epidemiological research. This course stresses analytical study designs and etiologic research. Topics include exposure-disease associations, threats to internal validity and their control, and valid interpretation of study results, including concepts of association, causality, and effect modification. **PRE-REQUISITES:** PUBH 7150 AND PUBH 7170, OR PERMISSION OF INSTRUCTOR **PREREQUISITE(S):** Permission of instructor.

### **PUBH 8174 - Epidemiology PUBH III**

**Credit Hours:** (3) **Description** This course is designed for doctoral and advanced master's degree students. The course focuses on the nature of causality in biological systems and the methods by which it may be determined. The course also focuses on extracting, organizing and interpreting various evidence to support public health and medical practices. Both observational and experimental study designs are considered. Landmark studies from the epidemiologic literature will be extensively used to illustrate these issues. **PRE-REQUISITES:** PUBH 7150, PUBH 7170, AND PUBH 7172, OR PERMISSION OF INSTRUCTOR.

### **PUBH 8175 - Lab Tech in Molecular Epi**

**Credit Hours:** (3) **Description** 7000/8000 level; Lecture/Lab Hours: 3 contact hours (2-5 pm)/week

### **PUBH 8180 - Foundations of Public Health**

**Credit Hours:** (3) **Description** Provides foundation for critical analysis of current public health issues, facilitating discussion of contemporary issues and challenges of public health policy and practice; key topics include balancing individual and societal rights; public health ethics; health disparities; cultural competence, socio-ecologic approaches to promote health; public health concerns in urban communities; and current public health practice.

### **PUBH 8190 - Adv SAS for PUBH Prof 1**

**Credit Hours:** (3) **Description** This class introduces students to advanced SAS programming statements and techniques using the SAS system software. **PREREQUISITE(S):** SPRT 7321, SPRT 7331, or permission of instructor.

### **PUBH 8191 - Adv SAS for PUBH Prof II**

**Credit Hours:** (3) **Description** This class introduces students to advanced SAS programming language statements and methods specifically for data management and reporting. Students will learn methods and techniques to identify data errors, use methods for data entry, maintain analytical data sets and summarize clinical/medical encounter data. This class is a continuation of PUBH 7190-8190. **PREREQUISITE(S):** SPRT 7321, SPRT 7331, or permission of instructor.

### **PUBH 8192 - Intro to Human Disease for PH**

**Credit Hours:** (3) **Description** This course introduces pathophysiology of major human diseases relevant to public health professionals. The course materials will be discuss from a public health perspective that focuses on mechanisms and progression of diseases, pathophysiologic associations with risk factors, structural changes, and the applications of this knowledge in disease prevention in public health. **PREREQUISITE(S):** SPRT 7321; and SPRT 7331 or permission of instructor.

### **PUBH 8300 - Spatial Anlysis/Sim for UrbnHlth**

**Credit Hours:** (3) **Description** The use of spatial analysis and simulation has become increasingly common in the study of urban health problems. This course aims to provide graduate students the framework and basic concepts of spatial epidemiology, health geography and system sciences. Students are expected to understand and be able to apply the major



methods from spatial analysis, GIS, and Agent-based model for health problems. The spatial analysis and simulation methods will be learned within the context of urban health, focusing on urban environment and health disparities. Students will apply and integrate various methods collectively for a selected project.

### **PUBH 8305 - Quant Meth Review Rsch**

**Credit Hours:** (3) **Description** (same as PSYC 7305-8305). This course focuses on quantitative strategies for reviewing research findings in the social sciences. These quantitative review techniques (often referred to as "meta-analysis") can help investigators summarize and resolve conflicts in past research. The course should be particularly useful to graduate students who are planning to conduct literature review as part of a research project, master's thesis, or doctoral dissertation. **PRE-REQUISITES:** Students enrolled in this course are expected to have completed PSYC 7302/8302 or an equivalent graduate-level statistics course, and to have a basic understanding of the analysis of variance and multiple regression.

### **PUBH 8306 - Linear Struct Modeling**

**Credit Hours:** (3) **Description** (PSYC 7306-8306). The purpose of this course is to provide students with an introduction to structural equation modeling (SEM). An emphasis will be placed on helping students use/apply SEM methodology to answer research questions in their areas of interest. After completing this course, students should be able to (1) conduct structural equation analyses using SAS, AMOS, and Mplus, (2) communicate results of structural equation analyses in both written and verbal form, (3) evaluate strengths and limitations of studies employing SEM techniques, and (4) provide consultation to colleagues on SEM related issues. **PRE-REQUISITES:** PUBH 7152 OR EQUIVALENT. **PREREQUISITE(S):** MKTG 3010 and 4901 (or equivalents); or MKTG 7060; or permission of instructor.

### **PUBH 8307 - App Struct Equ Modeling in PH**

**Credit Hours:** (3) **Description** This course will provide knowledge about the fundamentals of structural equation modeling, and its practical applications in public health. It will provide details of structural equation modeling, from statistical concepts to how to perform various types of structural equation analyses. Topics will include covariance structures, path diagrams, path analysis, model identification, model testing with emphasis on confirmatory factor analysis

and invariance testing. Statistical software recommended for this course are SAS and SPSS AMOS.

### **PUBH 8308 - Appl Multivariate Stat**

**Credit Hours:** (3) **Description** (PSYC 7308-8308). Covers multivariate analysis of variance (MANOVA) with independent designs and extensions to repeated measures and ANOVA. Goals include review of conceptual bases, learning SPSS and SAS procedures, learning analysis of simple and complex designs, and learning special post-hoc procedures. **PRE-REQUISITES:** PUBH 7152/8152 OR EQUIVALENT. May be repeated for a maximum of 12 credit hours

### **PUBH 8309 - Appl Surv Analys in Pub Hlth**

**Credit Hours:** (3) **Description** This course will cover the statistical concepts and techniques that are useful in the field of public health for the analysis of survival data or time to event data. The course will examine the features unique to survival data which distinguishes these data from other more familiar types of data. Topics include survival functions, hazard rates, types of censoring and truncation. Methods will include life tables, Kaplan-Meier plots, log-rank tests, Cox regression models, and Inference for parametric regression models. Statistical software recommended for this course are SAS and SPSS.

### **PUBH 8310 - Mixed Model Regression Analys**

**Credit Hours:** (3) **Description** Instruction in the use of mixed-model regression with a focus on design and analysis of group-randomized trials; attention also given to analysis of data from surveys based on cluster sampling, longitudinal studies, and studies involving matching. Same as PSYC 7310-8310.

### **PUBH 8311 - Appl Categorical Data Analys \*\***

**Credit Hours:** (3) **Description** Instruction includes tabular, logistic, and Poisson and Cox regression, as well as interpretation of SAS output. For advanced students in psychology, education, and public health pursuing a career in research. Same as PSYC 7311-8311.

### **PUBH 8333 - Addictive Behaviors**

**Credit Hours:** (3) **Description** This course provides public health students with an introduction to the historical, clinical,

epidemiological, and public policy issues related to addictive behaviors, including alcohol, tobacco, illicit drugs, and gambling. Students will be exposed to a variety of methodological approaches used by social and behavioral scientists to study addictive behaviors, including ethnography, surveys, geographical information systems, and clinical trials.

### **PUBH 8334 - Comm Based Part Resrch Mthds**

**Credit Hours:** (3) **Description** This course familiarizes students with key historical underpinnings of community based participatory research (CBPR), principles of CBPR practice, and methodological considerations in building community partnerships; community assessment; issue analysis; research planning; data gathering; and data sharing. The course will also address cultural competence; working with diverse populations; ethical considerations; as well as funding and Institutional Review Board issues.

### **PUBH 8335 - Struct/Environ Iss/Urban Comm**

**Credit Hours:** (3) **Description** This course focuses on concepts of risk and burden of disease in urban communities. It examines contemporary issues and challenges of the social, cultural, built, and physical environments of urban communities. Key topics include public health and urban health; roots of health inequality; risk and burden of disease; stress, socio-economic and structural influences on health; and community-based approaches (CBPR) to address public health concerns in urban communities.

### **PUBH 8336 - Women's Health**

**Credit Hours:** (3) **Description** This course examines topics in women's health in the United States; the programs, services, and policies that affect women's health; and methodological issues in research about women's health. the epidemiology, measurement and interpretation of these factors, and how these factors can be translated into interventions, programs, and policy, will be of major interest.

### **PUBH 8337 - Public Health Nutrition**

**Credit Hours:** (3) **Description** This course examines dietary intake and nutrition behaviors from a public health perspective. Topics covered include dietary intake measurement for the monitoring of population health; socioecological factors impacting eating behaviors from infancy into adulthood; and the role of diet in the development

of diseases with public health implications (e.g., obesity, malnutrition).<sup>3</sup>

### **PUBH 8338 - Critical Issues in Global Hlth**

**Credit Hours:** (3) **Description** This course focuses on critical issues in global health emphasizing the multidisciplinary approach to understanding global health problems as they occur within and across borders. Concepts include the interplay between global stressors such as population, urbanization, economics, environment, and war; and their effects on the spread of infectious and chronic diseases, nutrition, and environmental health. **PREREQUISITE(S):** Completion of 18 credit hours in the program of study with a minimum graduate GPA of 3.00 and permission of instructor

### **PUBH 8339 - Transl Rsrch Meth Pop Hlth**

**Credit Hours:** (3) **Description** This course covers methods to plan, design and evaluate the potential translatability and public health impact of prevention interventions. Methodological issues to be considered include reach, representativeness, adoption, implementation, adaptation, impact, scalability, and sustainability of interventions. Measurement and metrics to assess these elements and evaluate their impact will be included.

### **PUBH 8340 - Behavioral Intervention Develop**

**Credit Hours:** (3) **Description** This course provides training in the development of theory-based behavioral interventions that are relevant to public health research and practice. Focuses on community and population level strategies and methods.

### **PUBH 8341 - Physical Activity/Public Hlth**

**Credit Hours:** (3) **Description** This course is an overview of physical activity programming and interventions within the public health framework. Students will study issues germane to physical activity and public health; acquire knowledge of current research, best practices, guidelines and recommendations for physical activity; and develop skills integral to the design, implementation, and evaluation of public health programs that are intended to promote physical activity in specific populations.

### **PUBH 8342 - Epidemiology Min/Ethnic Pop**

**Credit Hours:** (3) **Description** This course provides an evidence-based approach to the study of the epidemiology and health disparities of racial and ethnic groups in the U.S. Emphasis is placed on historical events and immigration policies that have contributed to the prominent size of these populations, identification of data sources to describe this demographic imperative and health status, and on socio-political, cultural, and religious influences that inform public policy on health disparities.

### **PUBH 8343 - Tobacco Use: Cause, Conseq, Ctrl**

**Credit Hours:** (3) **Description** 3

### **PUBH 8345 - Health Literacy**

**Credit Hours:** (3) *Cross listing* (Same as PUBH 7345-PUBH 8345, COMM 7345-COMM 8345) **Description** This course introduces students to health literacy models and research from a health communication perspective. We explore the impact of health literacy on access to care, vulnerable populations, management of chronic illness, mental health, healthcare costs, caregiver and stakeholder health literacy, and other current issues. **PREREQUISITE(S):** Permission of instructor

### **PUBH 8346 - Public Mental Health**

**Credit Hours:** (3) **Description** This course provides an overview of mental health issues from a public health perspective. Topics include differentiating mental health from mental illness, socio-economic disparities in mental illness, community-based services for the diagnosis, treatment, and prevention of prevalent mental illnesses, and major mental health policy issues in the United States.

### **PUBH 8347 - Qualitative Mtds Hlth Research**

**Credit Hours:** (3) **Description** This course provides an overview of qualitative research methods commonly used in health related research, including the basic skills needed for data collection and analysis and an understanding of philosophical and epistemological roots. Students will learn to develop and critique a qualitative research proposal in terms of design, technique, analysis and interpretation. **PREREQUISITE(S):** Permission of instructor.

### **PUBH 8348 - Hlth Equity, Cult Comp, Soc Just**

**Credit Hours:** (3) **Description** 3

### **PUBH 8400 - Special Problems**

**Credit Hours:** (3) **Description** Independent investigation of a research problem or directed readings, in a selected area of public health chosen in consultation with the instructor. Only six hours of credit may be applied to a degree. May be repeated for a maximum of 6 credits.

### **PUBH 8442 - Cancer Epidemiology**

**Credit Hours:** (3) **Description** The course concentrates on distribution and trends of incidence, mortality and survival of major cancer types. It also discusses in depth current theories of cancer etiology, including radiation, tobacco, alcohol, drugs, occupation and other environmental, biologic and behavioral factors. Special issues of epidemiological research in cancer, such as study design, issues related to abstracting information from medical and other records and retrospective assessment of exposures will also be emphasized. **PRE-REQUISITES:** PUBH 7150 AND PUBH 7170, OR PERMISSION OF INSTRUCTOR.

### **PUBH 8443 - Infectious Disease Epidemiology**

**Credit Hours:** (3) **Description** This course is designed to introduce students to the basic concepts in infectious disease epidemiology. Topics include history and major concepts of infectious disease epidemiology, investigating new outbreaks, emerging infectious disease and bioterrorism. Measures for controlling infectious disease, such as surveillance, vaccination, and vector control will be taught. Major infectious diseases will be discussed in some detail, including HIV/AIDS, TB, Malaria, and Flu. **PRE-REQUISITES:** PUBH 7150 AND PUBH 7170, OR PERMISSION OF INSTRUCTOR. **PREREQUISITE(S):** SPRT 7321, SPRT 7331, or permission of instructor.

### **PUBH 8444 - PUBH Surveillance Fundamentals**

**Credit Hours:** (3) **Description** This course covers topics related to the systematic collection, analysis, and interpretation of health outcomes for use in planning, implementation, reporting, and evaluation of public health. Additional topics include basic concepts and procedures of sample designs, graphical techniques, and statistical methods of population sampling. May be repeated for a maximum of 12 credit hours

**PREREQUISITE(S):** SPRT 7321, SPRT 7331, or permission of instructor.

### **PUBH 8445 - Genetic Epidemiology**

**Credit Hours:** (3) **Description** This course will serve as a basic introduction to genetic epidemiology and its application in research. Basic concepts of human genetics will be introduced, and the research methods used to study the genetic basis of disease will be presented. Research methods discussed will include family based studies such as twin studies and affected sib pair linkage analyses, and candidate gene methods such as case-control, cohort and transmission/disequilibrium test. Gene-environment and gene-gene interaction will also be discussed. The course will conclude with a discussion of ethical issues around genetic epidemiology, current research and future directions. **PRE-REQUISITES:** PUBH 7150 AND PUBH 7170, OR PERMISSION OF INSTRUCTOR.

**PREREQUISITE(S):** SPRT 7321; and SPRT 7331 or permission of instructor.

### **PUBH 8447 - Public Health Genomics**

**Credit Hours:** (3) **Description** This course introduces students to the field of public health genomics through providing an overview of the field and evaluating challenges associated with the translation of genomic information into public health practices. The course materials will be presented on selected topics including: historical background of the field, genetic testing and counseling, communication of genomic information to public, using genomic information in disease prevention and health promotion efforts, genomic information in health care practices, ethical issues, genetics and race/health disparities, and implications of genomic information for communities.

### **PUBH 8450 - Randomized Clinical Trials I**

**Credit Hours:** 3 **Description** The purpose of this course is to provide students with a thorough grounding in the conduct of randomized clinical trials (RCTs) including design, management, evaluation, and resource acquisition. Emphasis is placed on RCTs that are relevant to public health research and practice.

### **PUBH 8455 - Clinical Trials II**

**Credit Hours:** 3 **Description** This course provides students with solid understanding of the statistical approaches used in the design, conduct, and analysis of clinical trials.

**PREREQUISITE(S):** PUBH 7-8150 (Biostatistics II) or equivalent, and PUBH 7-8450 (Randomized Clinical Trials I).

Students outside of UoM's Public Health program are welcome but *must* obtain permission from the course instructor.

### **PUBH 8460 - Advanced Survival Analysis**

**Credit Hours:** 3 **Description** This is the second course in survival analysis for public health research. It is intended for advanced students in public health pursuing a career in the area of public health and who are interested in gaining expertise in advanced methods for survival data or time to event data. As survival models are used throughout medical and public health related fields, we will focus on applications and methodologies beyond the scope of Applied Survival Analysis (PUBH 7/8309) and emphasis on data analysis, interpretations, and the underlying statistical theory. You will be introduced to statistical modeling techniques commonly used in public health as well as analysis procedures using SAS software. **PREREQUISITE(S):** PUBH 7-8309 (Applied Survival Analysis) or equivalent. Students outside of UoM's Public Health program are welcome but *must* obtain permission from the course instructor.

### **PUBH 8501 - Health Systems Organizations**

**Credit Hours:** (3) **Description** This course focuses on issues that contribute to assessing and improving the quality of health systems and services, including: institutional reforms and capacity building, politics and governance, health system financing, public/private partnerships, and building community capacity. The course will emphasize how problems come to be recognized and defined, their characteristics and magnitude, and plans and programs to alleviate them. Students will be taught to understand health system characteristics, problems, policies and management and to champion solutions to structural and behavioral challenges in the health care system.

### **PUBH 8502 - Hlth Policy, Theory & Methods**

**Credit Hours:** (3) **Description** The course covers advanced direct practice with adults. Treatment techniques include cognitive behavioral therapy, motivational interviewing, and other evidence based practices

### **PUBH 8503 - Health Systems Decision-Making**

**Credit Hours:** (3) **Description** This course addresses decision-making processes associated with managing risk in

healthcare organizations in multiple healthcare settings. Students will examine and evaluate the quality of risk management decisions for program-level decisions as well as for addressing enterprise-wide risks. Students will learn to structure challenging decision problems using critical thinking, to gather information, develop alternatives based upon organizational values, mission, and objectives, and determine the best course of action.

### **PUBH 8504 - IT & Organizational Change**

**Credit Hours:** (3) **Description** This course will focus on electronic medical records, and the potential for health IT to improve quality; the economics of healthcare IT; theories of diffusion of innovations; theories of the relationship between healthcare IT, and behavior, practice and healthcare organizational changes; the costs and benefits of healthcare IT in costs, benefits and quality improvement; and alternative health policy approaches to hasten IT adoption in health care.

### **PUBH 8505 - Aging, Pub Hlth, & Hlth Svs**

**Credit Hours:** (3) **Description** The graduate seminar introduces students to population aging and the current U.S. infrastructure designed to provide health services to the aging. It also focuses on federal and state policies that affect the health of older individuals as well as the systems designed to meet their health care needs. The class will follow an interactive seminar format with a combination of traditional lectures, guest speakers, student presentations, student-led discussions, and writing assignments.

### **PUBH 8505 - Aging, Pub Hlth, & Hlth Svs**

**Credit Hours:** (3) **Description** The graduate seminar introduces students to population aging and the current U.S. infrastructure designed to provide health services to the aging. It also focuses on federal and state policies that affect the health of older individuals as well as the systems designed to meet their health care needs. The class will follow an interactive seminar format with a combination of traditional lectures, guest speakers, student presentations, student-led discussions, and writing assignments.

### **PUBH 8601 - PUBH Preparedness & Response**

**Credit Hours:** (3) **Description** This course will introduce the organizational structure of emergency management and the specific role of public health emergency management in preparedness and response. Key topics include the common framework for emergency response, public health law, public

health surveillance tools, and health concerns of vulnerable populations.

### **PUBH 8603 - PUBH Emergency Response Ldrshp**

**Credit Hours:** (3) **Description** This course will identify the range of hazards that public health emergency managers must confront in order to understand the public health consequences and create the plans that guide us through our response. Key topics include leadership and mitigation strategies that can reduce morbidity and mortality resulting from disasters.

### **PUBH 8604 - Res Methods in Soc/Behav Sci**

**Credit Hours:** (3) **Description** This course provides a comprehensive introduction to step-by-step research process, including research design, data collection, interpretation, and guidelines for writing and presenting results in social and behavioral sciences. It covers a range of research methods, including observational techniques, survey research, focus groups, and other types of unstructured data collection methods. Emphasis is placed on understanding the strengths, weaknesses, and underlying logic of different procedures for obtaining empirical evidence for rigorous population health research.

### **PUBH 8605 - Built Environment and PH**

**Credit Hours:** (3) **Description** This interdisciplinary course focuses on increasing recognition that the built environment, including all of the physical parts where we live and work, and community features such as sidewalks, trails and public transit can impact human health. Key topics include neighborhoods, physical activity, and diet; active transportation; disparity by race/ethnicity and income levels; social determinants; and policy interventions.

### **PUBH 8623 - Spatial Health Inequalities**

**Credit Hours:** (3) *Cross listing* (same as ESCI 7623 - ESCI 8623). **Description** Application of GIS and Spatial Analysis to the study of health inequalities. **PREREQUISITE(S):** ESCI 4515 - ESCI 6515 or permission of instructor.

### **PUBH 8710 - HealthCare Economics**

**Credit Hours:** (3) **Description** (cross-listed with ECON 7710-8710) Applies basic economic concepts to analyze health care market and evaluate health policies; including

distinctive economic characteristics of health, health care industry, and health care professionals; American system of health care; current health care policy issues such as health care reform, managed care, and manpower planning.

### **PUBH 8720 - Grant Writing in HealthScience \*\***

**Credit Hours:** (3) **Description** The purpose of this course is to introduce doctoral students to the process of writing and submitting a research grant. Emphasis will be on National Institutes of Health (NIH) funding mechanisms; however, the topics covered will also be applicable to other federal and foundation funding sources.

### **PUBH 8800 - Guided Research in PUBH**

**Credit Hours:** (1-6) **Description** Students will conduct public health-related research under the mentorship of a faculty member.

### **PUBH 8900 - Adv Concepts in PUBH I**

**Credit Hours:** (3) **Description** One of two core PhD seminars for all entering students to the doctoral programs in the School of Public Health, this seminar is intended to provide the "big picture" context in which public health and other health sciences research is conducted. The seminar focuses on four broad areas: (1) the philosophy of science, history of science, scientific revolutions and paradigms, and the scientific method; (2) the important role that theory plays in setting a research agenda and conducting research generally and being engaged in public health research in particular; (3) the interdisciplinary nature of public health research and practice; and (4) scientific inquiry as a life's work reflecting on several individual's personal perspectives. **PREREQUISITE(S):** ECON 6810 or equivalent.

### **PUBH 8901 - Doctoral Professional Dev Sem**

**Credit Hours:** (3) **Description** This is one of two required seminar courses for all doctoral students in the School of Public Health. The seminar will address a variety of professional and personal issues that are vital to success as a doctoral student and public health professional. Topics include developing positive mentor/mentee relationships, time management, manuscript and grant writing, reviewing other's scientific work, delivering poster and oral presentations, teaching skills, preparing curriculum vitae,

networking and job negotiation/survival skills. **PRE-REQUISITE:** Enrollment as a doctoral student in the School of Public Health. **PREREQUISITE(S):** SCMS 3711 or SCMS 7020 .

### **PUBH 9000 - Dissertation**

**Credit Hours:** (1-9) **Description** Independent research for Doctor of Philosophy degree. Only 9 hours may be counted toward degree requirements. Students must be enrolled in this course during the semester in which the student expects to graduate. Grades of S, U, or IP will be given.

### **Quantitative Methods**

#### **QM 7770 - Comp Based Decsn Model**

**Credit Hours:** (3)

### **Sacred Music**

#### **MUSA 6260-6269 - Special Topics in Sacred Music**

**Credit Hours:** (1-3)

### **Social Work**

#### **SWRK 6060 - Social Work Integrated Health**

**Credit Hours:** (3) **Description** SWRK 4060/6060: Social Work Practice in Integrated Health Care is an elective course for seniors and master's of social work students. The objective of the course is to introduce social work students to the direct practice of integrated behavioral health in primary care. Students will become knowledgeable of the roles of behavioral health providers working in primary care settings, theories and models of care, and cross-cultural issues. They will develop skills in engagement, assessment, intervention planning and implementation, and practice evaluation. **PREREQUISITE(S):** Permission from instructor or MSW program director

#### **SWRK 6061 - Substance Abuse Treatment \*\***

**Credit Hours:** (3) Former: (7460) **Description** Prepare students for evidence-based practice in the field of substance abuse treatment. The course will present an integrative

biopsychosocial model for the understanding and treatment of substance abuse. Overview of the history of substance abuse, a review of models of addiction, a multidimensional model of the addiction process, the physiological effects of commonly abused substances, assessment and diagnosis of substance abuse disorders, and specific, evidence-based interventions adolescent and adult clients.

### **SWRK 6065-6069 - Special Topics in Social Work**

**Credit Hours:** 1-3 **Description** Topics vary and are announced in the online course listing.

### **SWRK 6365 - Manhood, Masculinity, and Healthy Male Youth Development**

**Credit Hours:** 3 **Description** This course examines the range and diversity of contemporary male social roles and experiences of boys, adolescent males, and adult men within U.S. families, communities and society. The historical context of these descendants of immigrants, refugees, enslaved Africans and first citizens residing in the United States will be explored utilizing theory and research that seeks to explain evolving American ideals about social justice and the strengths and limitations of Western Eurocentric thoughts about normative and social role development within an evolving multi-racial, multi-ethnic and multi-cultural society. 0

### **SWRK 6615 - Introduction to Infant Mental Health**

**Credit Hours:** 3 **Description** This course is designed to provide students with foundational knowledge for relationship-based work with children ages 0 – 5 and their caregivers. The course will also contribute to student's progress in meeting the requirements for Endorsement for Culturally Sensitive, Relationship-Focused Practice Promoting Infant Mental Health (IMH-E®). No Standard Letter

### **SWRK 6615-6619 - Special Topics in Social Work**

**Credit Hours:** 1-3 **Description** Topics vary and are announced in the online course listing.

### **SWRK 6911-6919 - Special Topics in Social Work**

**Credit Hours:** 1-3 **Description** Topics vary and are announced in the online course listing.

### **SWRK 6934 - Child Welfare Policy/Services**

**Credit Hours:** (3) **Description** Historic overview and contemporary application of child welfare policy; problems in policy development; contemporary American child welfare services in both public and private domains.

### **SWRK 6935 - Child Welfare II**

**Credit Hours:** (3) Former: (7420) **Description** Roles and responsibilities of social workers practicing within child welfare system; mastery of practice skills at a range of levels, such as individual, family, and environment designed to develop culturally competent child welfare workers. **PREREQUISITE(S):** Admission to the MSW program or permission of the instructor/MSW Director

### **SWRK 6937 - School Social Work \*\***

**Credit Hours:** (3) *Cross listing* N/A **Description** This course develops the knowledge and skills necessary for successful and competent social work in public schools; covering the varied roles and functions of school social workers in their practice with diverse groups of students, families, school personnel, and communities. Best practices in assessing, intervening, and evaluating social work practice across all system levels are emphasized. **PREREQUISITE(S):** Admission to the MSW Program or Permission from Instructor/MSW Director

### **SWRK 6944 - Encountering Poverty**

**Credit Hours:** (3) **Description** This course examines the development and analysis of specific policies that impact rural and urban centers with high concentrations of poverty. Emphasis will be placed on the interaction effects of federal policies regarding crime, education, employment and housing, and federal and state income maintenance programs for the poor. The strengths and weaknesses of various approaches to policy development and analysis will be discussed.

### **SWRK 6945 - Social Work in Paris**

**Credit Hours:** (6) **Description** This 4000/6000 level elective study-abroad course will allow students to learn about the French social welfare system, the profession of Social Work, social work service delivery, and French culture and contextualizing factors through a one-month immersion course

in Paris, France, delivered in partnership with L'Ecole Pratique de Service Social. Students will compare and contrast the French and American social welfare systems and develop projects for social change. Grades of S,U, or I will be given.

### SWRK 6946 - Grief and Loss

**Credit Hours: 3** **Description** *Grief and Loss* is an asynchronous online elective designed to enhance the content of the core social work curriculum. Students will be exposed to issues of loss and grief experienced by individuals across the life span. The focus is on normal and unresolved grief and loss as well as a variety of factors that facilitate and/or impede the ability to function after loss. Assessment skills and therapeutic interventions will be explored. Issues regarding values and ethics, cultural diversity and populations at risk, as they relate to loss and grief, will be interspersed throughout the course.

### SWRK 6950 - Violence Across the Lifespan: An Intro to Forensic Social Work

**Credit Hours: 3** **Description** This elective course builds on foundational competencies, behaviors, and skills to help students develop specialized knowledge and skills for working with families who have experienced violence. The emphasis of the course is research informed practice with families who have experienced violence within the family (e.g., child abuse/neglect, intimate partner violence [IPV], sexual abuse, and elder abuse). Special attention is given to clinician self-care.

### SWRK 7001 - Skills Prof Pract SWRK \*\*

**Credit Hours: (3)** **Description** The course covers the profession's unique mission, values, roles and typically practice used in the conduct of social work practice. It further examines theories of practice and generalist roles and skills. The course is designed to prepare students for their initial field experience in Field Placement I. The course introduces students to the Practice Wheel as a primary model for serving children and families.

### SWRK 7002 - Individuals and Families

**Credit Hours: (3)** **Description** A required foundation course designed to prepare students to apply evidence-based interventions to social work practice with individuals and families. Foundation knowledge and skills are developed in the areas of theory, therapeutic alliance, risk assessment, case formulation, ethical decision-making, critical thinking and evidence-based practice. Particular emphasis is placed on

social work practice with culturally diverse, vulnerable and high-risk populations.

### SWRK 7003 - Groups

**Credit Hours: (3)** **Description** A required foundation course designed to prepare students to apply evidence-based interventions to social work practice with groups. The course emphasizes mezzo practice skills/ roles, evidence-based theories, problem-solving processes, group dynamics, phases of group development, needed for group work with organizations and community groups. Issues inherent to diversity, at-risk populations and social justice are integrated. **PREREQUISITE(S)** or **COREQUISITE(S)**: SWRK 7001

### SWRK 7005 - Assessmnt,Diag,Psychopath \*\*

**Credit Hours: (3)** **Description** A required concentration course designed to provide students with current information about the assessment and diagnosis of mental disorders utilizing the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) classification system. The course includes etiology, prevention, assessment and treatment approaches for a number of commonly diagnosed mental health disorders. Students will identify a range of risk and protective factors effecting individuals with a mental illness and compare/contrast theories and interventions. **PREREQUISITE(S)**: Admission to the MSW program or permission from MSW director or instructor.

### SWRK 7013 - Treatment of Trauma

**Credit Hours: (3)** **Description** An elective course designed to broaden students ability to understand and treat persons exposed to traumatic events. The course examines roles, assessments and intervention strategies for social workers working with clients exposed to specific types of trauma; rape, war, natural disasters. Emphasis is placed on understanding biopsychosocial influences, psychopharmacology, incidence, course, treatment and evidence-based assessment and interventions skills. **PREREQUISITE(S)**: Admission to the MSW program or permission from MSW director or instructor.

### SWRK 7021 - SW Across the Lifespan \*\*

**Credit Hours: (3)** **Description** Course provides a multidimensional understanding of person and environment relationships. An ecological/ systems framework is paired with a developmental approach to provide an interactional understanding of human behavior. The course examines life



span development from conception through older adulthood. Issues of human diversity (i.e. race, ethnicity, class, gender, sexual orientation) will be highlighted. **PREREQUISITE(S):** Admission to the MSW program or permission from MSW director or instructor.

### **SWRK 7022 - Organizations and Communities**

**Credit Hours:** (3) **Description** A required foundation course designed to prepare students to apply evidence based interventions to social work practice with organizations and communities. The course emphasizes macro practice skills/roles. The course stresses an eco-systems perspective and looks at social system malfunctions and inequities. The nature and dynamics of social service networks and social service network eco-systems perspective. **PREREQUISITE(S):** Admission to the MSW program or permission from MSW director or instructor.

### **SWRK 7025 - Scientific Methods \*\***

**Credit Hours:** (3) **Description** A required course designed to teach research methods and the elements of evidence based practice. The course focuses on social work practice-focused quantitative and qualitative research knowledge and skills including critical evaluation of empirical literature, basic research methodology including construct operationalization, study design, selection, development, implementation, measurement, specific instruments, data management and data analysis using statistical software. **PREREQUISITE(S):** Admission to the MSW program or permission from MSW director or instructor.

### **SWRK 7026 - Evaluative Research \*\***

**Credit Hours:** (3) **Description** A required course designed to teach students hard skills in ethical program evaluation; statistical analysis techniques; and research findings dissemination and application from the micro to the macro levels and throughout diverse areas of practice. Must be repeated for a minimum of 12 hours credit (4 semesters). **PREREQUISITE(S):** SWRK 7025.

### **SWRK 7028 - Advanced Individual Practice Across Systems**

**Credit Hours:** 3 **Description** This required specialization course covers advanced direct practice techniques with people of all ages. Techniques include cognitive behavioral therapy, motivational interviewing, and other evidence based

techniques are included. **PREREQUISITE(S):** SWRK 7001 and SWRK 7002 Standard Letter

### **SWRK 7030 - Social Welfare Policy/Services \*\***

**Credit Hours:** (3) **Description** This required course explores the historical process leading to, and the philosophical underpinnings of current welfare policy in the United States. The course examines local, state, national and international policies affecting social work practice, and utilizes comparative approaches to understand regulatory processes and procedures. Economics is studied as foundational to social welfare and policy and social work policy practice. **PREREQUISITE(S):** Admission to the MSW program or permission from MSW director or instructor.

### **SWRK 7034 - Advanced Community Practice Across Systems**

**Credit Hours:** 3 **Description** This required specialization course covers advanced community practice, including public and private policy, advocacy, the impact of policy on agencies and programs, budgeting basics, risk assessment and disaster response, and business planning and administration. The goal is to help social workers assume leadership positions in social service agencies and organizations. **PREREQUISITE(S):** SWRK 7022 & SWRK 7030. Standard Letter

### **SWRK 7040 - Advanced SW Theory \*\***

**Credit Hours:** (3) **Description** Course covers major theories that have influenced social work research, social work practice, and social welfare policy. The interdisciplinary nature of social work theory and history of social work will be covered. Students will learn methods of theory building and theoretical modeling. **PREREQUISITE(S):** SWRK 7002, SWRK 7003, SWRK 7021, SWRK 7022, SWRK 7025, & SWRK 7030.

### **SWRK 7041 - Play Therapy \*\***

**Credit Hours:** (3) **Description** This course is designed to teach play therapy theory and techniques to graduate students. Students will learn the theoretical underpinnings of directive and non-directive play therapy and the techniques by which the theory is practiced. **PREREQUISITE(S):** Admission to the MSW program or permission from MSW director or instructor.

## SWRK 7045 - Social and Political Action through Public Discourse

**Credit Hours:** 3

**Description** Elective course includes a critical examination of the treatment of social work, social workers, and the clients that social workers serve in public discourse. Students will examine strategies to influence the public discourse and analyze the relationships between public discourse and public policy.

**PREREQUISITE(S):** Graduate status and permission from the instructor, MSW program director, or DSW program director.

## SWRK 7050 - Advanced Standing Field \*\*

**Credit Hours:** (1) Former: (7420) **Description** The advanced standing field course connects generalist curriculum learned in undergraduate social work to the masters-level curriculum at the advanced level. Assignments encourage self-assessment, increase empathy towards populations served, and expose students to core competencies.

## SWRK 7051 - Field Placement I

**Credit Hours:** (3) **Description** This course provides opportunities for students to integrate what they are learning in the classroom with practical experience in an agency that provides social work services. The first course prepares students for work as generalist social workers, to help them learn to apply critical thinking skills, to increase their range of social work skills and techniques, to understand the importance of the value base and increase their self-understanding.

## SWRK 7052 - Field Placement II

**Credit Hours:** (3) **Description** The first year of field placement is intended to prepare students for work as generalist social workers, to help them learn to apply critical thinking skills, to increase their range of social work skills and techniques, to understand the importance of the value base and ethical framework of the profession of social work, and to increase their self-understanding. Field Placement II builds on the learning foundation that was established in Field Placement I. \$30 per credit hour **PREREQUISITE(S):** SWRK 7051, Field Placement I

## SWRK 7053 - Field Placement III \*\*

**Credit Hours:** (3) **Description** The second year is directed toward an area of social work specialization and the development of advanced skills and practice, building on the first year of placement and providing opportunities for more complex application of social work theories, models, values, and ethics. Field Placement III builds on the learning foundation that was established in Field Placement I and II. \$30 per credit hour **PREREQUISITE(S):** SWRK 7052, Field Placement II **COREQUISITE(S):** SWRK 7055, Integrative Field Seminar I

## SWRK 7054 - Field Placement IV \*\*

**Credit Hours:** (3)

**Description** The second year is directed toward an area of social work specialization and the development of advanced skills and practice, building on the first year of placement and providing opportunities for more complex application of social work theories, models, values, and ethics. Field Placement IV builds on the learning foundation that was established in Field Placement I, II, and III. \$30 per credit hour

**PREREQUISITE(S):** SWRK 7053, Field Placement III  
SWRK 7055, Integrative Field Seminar I **COREQUISITE(S):** SWRK 7056, Integrative Field Seminar II

## SWRK 7055 - Integrative Field Seminar I \*\*

**Credit Hours:** (3)

**Description** Course covers preparation for advanced social work practice and preparation for the social work licensure exam. **PREREQUISITE(S):** SWRK 7052, Field Placement II **COREQUISITE(S):** SWRK 7053, Field Placement III

## SWRK 7056 - Integrative Field Seminar II \*\*

**Credit Hours:** (3) Former: (6501)

**Description** Course covers preparation for advanced social work practice and preparation for the social work licensure exam. **PREREQUISITE(S):** SWRK 7053, Field Placement III  
SWRK 7055, Integrative Field Seminar I **COREQUISITE(S):** SWRK 7054, Field Placement IV

## SWRK 7060-7065 - Special Topics in Social Work

**Credit Hours:** (1-3) **Description** Topics vary and are announced in the online course listing.

## SWRK 7070 - Independent Study

**Credit Hours:** (1-3) **Description** Provides an opportunity for directed advanced reading, an advanced field project, and/or research in special areas of social work. Provides in-depth learning opportunities not otherwise available in the regular curriculum. Independent study replaces one elective.

**PREREQUISITE(S):** Admission to the MSW program or permission from MSW director or instructor.

## SWRK 7071-7075 - Special Topics in Social Work

**Credit Hours:** (1-3) **Description** Topics vary and are announced in the online course listing.

## SWRK 7100 - Developing Fundable Proposals

**Credit Hours:** 3 **Description** This course is designed to prepare students to apply knowledge of evidence-based interventions and knowledge of policy related to social work practice to the development of a proposal for funding. Foundational knowledge and skills in grant writing will be explored. There will also be emphasis on working effectively with others to operationalize ideas to create a program or a plan in response to a request for proposals/applications. Students will learn to organize a proposal and respond to reviewers. Particular emphasis is placed on proposals for social work practice with culturally diverse, vulnerable and high-risk populations. **PREREQUISITE(S):** Admission to the MSW, to the DSW program, or instructor approval are required. Standard Letter

## SWRK 7155 - Informatics & Data Driven Decision Making in Social Work

**Credit Hours:** 3

**Description** This course emphasizes the use of information technology in social work practice (1) to improve overall quality of services provided by clinicians as well as (2) to leverage the implicit knowledge of workers so that agencies foster ongoing innovations in service provision. **PREREQUISITE(S):** Graduate status and permission by instructor, MSW Director, or DSW Director.

## SWRK 7164 - Critical Theory & Social Work

**Credit Hours:** 3 **Description** This course will explore critical theory and power within the U.S., including critical race

theory and Black feminist thought. The educational system and interactions with police will be used as examples for applying these frames. Students will explore additional opportunities for social workers to apply these theories to their practice on the micro, mezzo, and macro levels.

**PREREQUISITE(S):** Graduate level.

## SWRK 7175 - Reflective Supervision

**Credit Hours:** 3

**Description** Reflective supervision is a regular collaborative reflection experience between a service provider and supervisor that builds on the supervisee's use of his/her thoughts, feelings, and values within a service encounter. In this course, the student will learn about the origins and history of different models of supervision. Through discussion and practice, the student will learn how supervision can provide a rich opportunity for service providers to further their self-awareness and skills.

**PREREQUISITE(S):** Graduate status and permission by instructor, MSW Director, or DSW Director.

## SWRK 7701 - Play Therapy and Expressive Arts

**Credit Hours:** 3 **Description** A course that provides an overview of the use of expressive arts techniques in play therapy. Expressive Arts is an experiential and engaging form of intervention used within the social and behavioral sciences and if embedded with play therapy techniques can be a powerful intervention for children and adolescents. Exposing students to the many facets of play therapy and the use of expressive arts, will engage students in the helping profession/field. **PREREQUISITE(S):** Graduate Level

## SWRK 7702 - Advanced Play Therapy-Group Skills and Assessment

**Credit Hours:** 3 **Description** This is an advanced Play Therapy course on implementing play therapy in groups. Students will learn basic skills in providing play therapy in a group setting and will include discussions about topics such as school-based play therapy, kinesthetic storytelling as a play therapy intervention, AutPlay in groups (for serving neurodiverse clients), digital play therapy in groups, bibliotherapy in groups, and utilizing play-based group interventions across settings and demographics. There is an opportunity for service learning and engaged scholarship experience in this course which may include running groups for community-agencies or collaborating with play therapy

association chapters on projects as a form of practice play.

**PREREQUISITE(S):** Graduate level

### **SWRK 7948 - Clinical Social Work Process & Technique**

**Credit Hours:** (3) **Description** This elective course allows students to enhance and develop their skills and clinical social workers-in-training. Course will explore various approaches to therapy and behavior change with a focus on both content and process. Students will develop clinical skills through readings, observation of therapy session role plays, topical and case presentations, and classroom discussion.

**PREREQUISITE(S):** SWRK 7001, SWRK 7002, SWRK 7003, and SWRK 7005.

### **SWRK 7949 - Screening, Brief Intervention, and Referral to Treatment (SBIRT)**

**Credit Hours:** 3 **Description** Through readings, role plays, presentations, and online trainings, the students will learn how to identify and treat patients with substance use and mental health disorders utilizing a treatment model called SBIRT (Screening, Brief Intervention, and Referral to Treatment) that encourages mental health and substance abuse screenings as a routine preventive service in healthcare. **PREREQUISITE(S):** Graduate level status at the University of Memphis and permission from the instructor or MSW Program Director. Standard Letter

### **SWRK 7996 - Thesis**

**Credit Hours:** (1-6) **Description** Thesis provides the opportunity for a student to complete an advanced independent research project during a two-semester sequence. Students will develop and apply research skills and produce a comprehensive paper that will contribute to knowledge in the social work profession. The Master's thesis is a two-semester (6 credit hours) commitment that will be completed during the concentration year. Thesis is not required for completion of the Master's of Social Work program.

### **SWRK 8020 - Quantitative SW Research**

**Credit Hours:** (3) **Description** Course covers fundamental strategies for developing a quantitative research study.

### **SWRK 8030 - Qualitative Methods in Social Work Research**

**Credit Hours:** 3 **Description** The purpose of this advanced course is to further prepare doctoral students to organize and conduct qualitative research. Students will learn the history of qualitative methods and the theoretical underpinnings to qualitative data collection and analysis. No

**PREREQUISITE(S):** Doctoral status or permission by the instructor.

### **SWRK 8040 - Advanced SW Theory \*\***

**Credit Hours:** (3) **Description** Course covers major theories that have influenced social work research, social work practice, and social welfare policy. The interdisciplinary nature of social work theory and history of social work will be covered. Students will learn methods of theory building and theoretical modeling. **PREREQUISITE(S):** SWRK 7002, SWRK 7003, SWRK 7021, SWRK 7022, SWRK 7025, and SWRK 7030.

### **SWRK 8045 - Social and Political Action through Public Discourse**

**Credit Hours:** (3) Former: 8045 **Description** Students will get training and experience in agenda-setting, legislative research, and advocacy, both legislatively and through the media to become the public voice of social work for the marginalized and for the advancement of society in general. Students will learn advocacy techniques and how to utilize the media to lead the discourse for social justice in the community. No

### **SWRK 8050 - Writing for Publication**

**Credit Hours:** (3) **Description** Course serves as a project-focused seminar with the goal of preparing students to write for scholarly publication. The seminar will take the form as a writing group and emphasize the writing process.

### **SWRK 8060 - Developing Fundable Proposals**

**Credit Hours:** 3 **Description** Course covers strategies for funding evidence-based social work practice techniques. Emphasis will be placed on how to develop funding when faced with limited resources.

### **SWRK 8061-8065 - Special Topics in Social Work**

**Credit Hours:** (1-3) **Description** Topics vary and are announced in the online course listing.

### SWRK 8065 - Pedagogy in SW

**Credit Hours:** (3) **Description** Course focuses on aspects of pedagogy that are unique to social work education. Course will cover paradigms for teaching and learning, meeting accreditation standards, evaluating for accreditation, and the unique issues of running field placement.

### SWRK 8080 - Managing SW Practice

**Credit Hours:** (3) **Description** This course, required in the DSW, is designed to provide social work professionals and clinical practitioners the skills and knowledge to establish, direct, and administer social work and behavioral health practices. The course covers legal, logistic, and financial issues in developing a private practice. **PREREQUISITE(S):** Graduate level. Standard Letter

### SWRK 8080-8075 - Special Topics in Social Work

**Credit Hours:** (1-3) **Description** Topics vary and are announced in the online course listing.

### SWRK 8085 - Innovations in SW Practice

**Credit Hours:** (3) **Description** This course will introduce students to theories of assessment, intervention, diversity, evaluation, and termination. Specific attention is given to the development of context-relevance and evidence-based interventions commonly used in current practice over a variety of specific client and community needs. Challenges and concerns especially unique to vulnerable families, oppressed families, at-risk families, military families, low-income families, families of color, and nontraditional families are reviewed within an individual and family framework. Students will also develop an understanding of how values and ethics impact social work practice with each of the practice models.

### SWRK 8102 - Social Work Statistics

**Credit Hours:** 3 **Description** This course is an applied course intended to introduce students to the statistical tools used for empirical analysis and decision-making in the social work context. This course is designed to provide an introduction to the process of conducting statistical analyses of data relevant to public issues, problems, and policies in the area of social work. Both conceptual understanding and the development of practical applied skills are emphasized throughout the course. **PREREQUISITE(S):** Permission by instructor.

### SWRK 8155 - Informatics & Data Driven Decision Making in Social Work

**Credit Hours:** 3 Former: 8055

**Description** This course emphasizes the use of information technology in social work practice (1) to improve overall quality of services provided by clinicians as well as (2) to leverage the implicit knowledge of workers so that agencies foster ongoing innovations in service provision. **PREREQUISITE(S):** Instructor approval.

### SWRK 8175 - Reflective Supervision

**Credit Hours:** 3 **Description** Reflective supervision is a regular collaborative reflection experience between a service provider and supervisor that builds on the supervisee's use of his/her thoughts, feelings, and values within a service encounter. In this course, the student will learn about the origins and history of different models of supervision. Through discussion and practice, the student will learn how supervision can provide a rich opportunity for service providers to further their self-awareness and skills. **PREREQUISITE(S):** Graduate status and permission by instructor, MSW Director, or DSW Director.

### SWRK 9000 - Dissertation

**Credit Hours:** (1-6) **Description** Candidates for graduation will be required to complete a dissertation. Grade of S/U, or IP will be given.

## Sociology

### SOCI 6210 - Rise of Sociological Theory

**Credit Hours:** (3) **Description** Nature, grounds, and explanatory powers of various forms of sociological theory; analysis of bases for scientific and philosophical assumptions and social and political contexts; major theorists including Durkheim, Marx, Weber, Simmel.

### SOCI 6211 - Contemp Soc Theory \*\*

**Credit Hours:** (3) **Description** A course that examines the trends and the development in sociological theory from the mid-20th century to today. Theories covered range from descriptive to explanatory to critical theories of social action, organization, inequality, and change, as well as the interaction between people, groups, and even societies.

### **SOCI 6312 - Intermed Soc Stat**

**Credit Hours:** (3) **Description** Multivariate analysis of social data; use of computer programs for data management and statistical analysis.

### **SOCI 6425 - Environmental Sociology**

**Credit Hours:** (3) **Description** Role of social institutions, power, and inequality in shaping environmental discourse and action; dynamics of environmental social movements.

### **SOCI 6842 - Soci Of Occup & Prof**

**Credit Hours:** (3) **Description** Sociological analysis of the division of labor, occupational groupings, career patterns, and professional associations in modern American society.

### **SOCI 6900-6909 - Special Topics in Sociology**

**Credit Hours:** (3)

### **SOCI 7210 - Theory Seminar**

**Credit Hours:** (3) **Description** An advanced analysis of recent developments in sociological theory, including the relationship of theory to empirical research.

### **SOCI 7212 - Mult Racial Femnst Thry**

**Credit Hours:** (3) **Description** Intensive analysis of major figures and issues in contemporary multi-racial feminist theory, emphasis on theory that grapples with conceptual and methodological requirements for multi-racial feminist politics of diversity that draws on both United States and international scholarship.

### **SOCI 7320 - Sem Meth Soc Res**

**Credit Hours:** (3) **Description** Issues and techniques in data collection for the design and implementation of independent research projects; logic of conducting social scientific research, ethical considerations, logic of sampling, various methods of collecting data for social research (e.g. experimental design, participant observation, survey research/questionnaire construction, and content analysis), and writing research proposals.

### **SOCI 7322 - Sem Quant Data Analysis**

**Credit Hours:** (3) **Description** Preparation, analysis, and interpretation of existing quantitative data; data processing, multivariate analysis, interpretation, and writing results for research projects. **PREREQUISITE(S):** SOCI 6312, equivalent, or permission of instructor.

### **SOCI 7325 - Sem Qualitative Resrch**

**Credit Hours:** (3) **Description** Examination of qualitative social science research methods, particularly the rationale behind these methods, how and when they are employed, and processes of analyzing qualitative data.

### **SOCI 7410 - Sociology Of Gender**

**Credit Hours:** (3) **Description** Social definitions of gender and impact of these definitions on women's and men's lives; women's and men's responses to these conditions.

### **SOCI 7411 - Social Stratification**

**Credit Hours:** (3) **Description** Theoretical analysis of how social class status and power shape social relations, determine life chances, and affect attitudes, opinions, and political choices of individuals and groups; processes that perpetuate systems of class, gender, and race inequality, and degree of social mobility in societies.

### **SOCI 7421 - Racial & Social Inequal**

**Credit Hours:** (3) **Description** A comparative study of racial, ethnic, and social minorities focusing on inequality as global and historical phenomena. Includes theoretical and empirical research on multiple interactions of race, class and gender.

### **SOCI 7442 - Sociology Of Poverty**

**Credit Hours:** (3) **Description** Patterns of wealth and income inequality in contemporary society; consequences of poverty for society and individuals in various institutional contexts. Critical evaluation of traditional theories of poverty and contemporary alternatives.

### **SOCI 7450 - Seminar On Aging**

**Credit Hours:** (3) **Description** Aging as sociological phenomenon through understanding and applying principles of gerontological analysis to contemporary topics in aging, including acquaintance with and use of computer accessible literature data base.

## **SOCI 7460 - Sociology of Sexualities**

**Credit Hours:** (3) **Description** An examination of the long tradition of sexualities within sociology. The course covers the theoretical foundations of this field of research methods and ethics, an empirical studies of sexuality.

## **SOCI 7480 - Sociology of Childhood and Youth**

**Credit Hours:** 3 **Description** This course will examine how children shape and are shaped by the social worlds in which they live. We will examine how the meaning and experience of childhood varies historically and across current social locations. We will focus on several topics during the semester: the history of childhood, parenting and its effect on youth, how your experience education, play, peer relationships, health and deviance. We also focus on issues of gender, social class, race/ethnicity and sexuality as they relate to childhood and youth. **PREREQUISITE(S):** Graduate standing

## **SOCI 7511 - Theories Of Deviance**

**Credit Hours:** (3) **Description** A seminar in the sociological approaches to the study of deviance and social disorganization with an emphasis on current sociological theory and research.

## **SOCI 7612 - Social Demography**

### **Credit Hours:** 3 **Description**

The purpose of this course is to provide an overview of the field of social demography. We will cover the basic population processes—fertility, mortality, and migration/distribution—along with introductions to theory, data, and methods. The two main goals of this course are to: 1) introduce students to both classic and current literature in the field of social demography and 2) teach students the techniques used to analyze demographic data. Our focus on "social demography" reflects the orientation of understanding population processes through a sociological lens. This does not eliminate other population perspectives (e.g., geographic, biological, economic, etc.) from consideration in this course, but the focus here tends to be on the social aspects.

**PREREQUISITE(S):** Graduate standing

## **SOCI 7631 - Urban Theory Seminar**

**Credit Hours:** (3) **Description** Competing theories and accompanying research findings on current issues in macro and micro urban theory; rise and fall of cities; effects of urbanism and urban form on individual and group behavior;

how urban social groups (e.g., social classes, race/ethnic groups) manage their lives and their relations with others, and how these groups mobilize in efforts to change or resist change.

## **SOCI 7655 - Socio Found Cmnty Stds**

**Credit Hours:** (3) **Description** Ecological, interaction, and social system perspectives for community analysis; contemporary applications of theories within context of American society; implications of current changes for community life and social stratification, leadership and power structure, social differentiation and integration, community development, and ideology.

## **SOCI 7711 - Sem Globlzttn/Soc Chng**

**Credit Hours:** (3) **Description** Sociological and historical perspectives on social, political, and economic differences among countries and regions of the world; global/transnational processes in uneven development; state formation; class transformation; democracy.

## **SOCI 7721 - Sem Social Movements**

**Credit Hours:** (3) **Description** Origins, organization, and consequences of intentional, collective efforts at social change; social movement theory; in-depth examination of selected movements, both domestic and international.

## **SOCI 7751 - Sem Socio Social Psyc**

**Credit Hours:** (3) **Description** Advanced course in sociological social psychology surveying various classical and contemporary microsociological theories and methodological orientations. Topics include symbolic interaction, role theory, dramaturgical analysis, self and socialization, social exchange, group dynamics and many other relevant current research and theoretical perspectives.

## **SOCI 7811 - Sociology of Organizations**

**Credit Hours:** (3) **Description** Examination of competing theories of formal and complex organizations and accompanying empirical research on macro organizational behavior, the internal and external dynamics of organizations, the relationships between organizations and institutions, and organizational change.

## **SOCI 7820 - Sem Soci Of Education**

**Credit Hours:** (3) **Description** Schools and school life from sociological perspective; how societal objectives are translated into school policies and practices.

### **SOCI 7830 - Seminar In Family**

**Credit Hours:** (3) **Description** An advanced course that is primarily concerned with research findings in the area of family disorganization, changes in family structure and function, parent-child interaction, working mothers, and problems of aging.

### **SOCI 7851 - Medical Sociology**

**Credit Hours:** (3) **Description** Sociological understandings of society, demographic processes, organizations, behavior, and health.

### **SOCI 7852 - Soci Mental Illness**

**Credit Hours:** (3) **Description** Social meaning of mental illness, with special emphasis on the cultural, organizational, and behavioral contexts of the occurrence and management of mental illness.

### **SOCI 7853 - Gender And Health**

**Credit Hours:** (3) **Description** Advanced course on sociological understandings of gender, health, and illness in the US; topics include health status, health behaviors, reproductive health, health professions, care-giving, aging and mortality with special attention to women and men of different class, racial, and ethnic groups.

### **SOCI 7860 - Sem Soci Of Religion**

**Credit Hours:** (3) **Description** A sociological examinations of religious institutions; cultural and social factors associated with religious structure, religious values, and religious behavior ; secularization of culture and change of social structure; analysis of religious organizations, religious leadership, and religious movements.

### **SOCI 7901-7909 - Special Topics in Sociology**

**Credit Hours:** (1-3)

### **SOCI 7912 - Directed Indiv Study**

**Credit Hours:** (1-4) **Description** Individually directed advanced reading and/or research in special areas of interest. NOTE: Course may be repeated for a maximum of 6 hours credit.

### **SOCI 7914 - Wrkshp For Grad Assts**

**Credit Hours:** (1-3) **Description** Presentations of research methods and scholarly output by faculty, graduate students, and visiting scholars. May be repeated for a maximum of 12 credit hours. NOTE: Sociology majors may not use this course to fulfill degree requirements. May be repeated for credit when topic varies.

### **SOCI 7920 - Teaching Sociology at the College Level**

**Credit Hours:** 3 **Description** Higher educational pedagogy training in sociology instruction. In-depth background in both sociological context and pedagogical practice for college-level instruction. Current best practices are featured. Topics include: inclusivity, increasing student participation, leading effective discussions, giving effective lectures, multi-modal teaching styles, designing assessments, utilizing media and internet learning-support, and increasing civic engagement. Standard Letter

### **SOCI 7996 - Thesis**

**Credit Hours:** (1-6) **Description** Supervised research in preparation for advanced degree thesis. Grades of S, U, or IP will be given.

### **SOCI 8210 - Theory Seminar**

**Credit Hours:** (3) **Description** An advanced analysis of recent developments in sociological theory, including the relationship of theory to empirical research.

### **SOCI 8212 - Mult Racial Femnst Thry**

**Credit Hours:** (3) **Description** Intensive analysis of major figures and issues in contemporary multi-racial feminist theory, emphasis on theory that grapples with conceptual and methodological requirements for multi-racial feminist politics of diversity that draws on both United States and international scholarship.

### **SOCI 8320 - Sem Meth Soc Res**



**Credit Hours:** (3) **Description** Issues and techniques in data collection for the design and implementation of independent research projects; logic of conducting social scientific research, ethical considerations, logic of sampling, various methods of collecting data for social research (e.g. experimental design, participant observation, survey research/questionnaire construction, and content analysis), and writing research proposals.

### **SOCI 8325 - Sem Qualitative Resrch**

**Credit Hours:** (3) **Description** Examination of qualitative social science research methods, particularly the rationale behind these methods, how and when they are employed, and processes of analyzing qualitative data.

### **SOCI 8410 - Sociology Of Gender**

**Credit Hours:** (3) **Description** Social definitions of gender and impact of these definitions on women's and men's lives; women's and men's responses to these conditions.

### **SOCI 8411 - Social Stratification**

**Credit Hours:** (3) **Description** Theoretical analysis of how social class status and power shape social relations, determine life chances, and affect attitudes, opinions, and political choices of individuals and groups; processes that perpetuate systems of class, gender, and race inequality, and degree of social mobility in societies.

### **SOCI 8422 - Race/Class/Gender**

**Credit Hours:** (3) **Description** Concepts, theories, and contemporary empirical research regarding multiple intersections of race, class, and gender; implications for sociological theory and methodology.

### **SOCI 8442 - Sociology Of Poverty**

**Credit Hours:** (3) **Description** Patterns of wealth and income inequality in contemporary society; consequences of poverty for society and individuals in various institutional contexts. Critical evaluation of traditional theories of poverty and contemporary alternatives.

### **SOCI 8460 - Sociology of Sexualities**

**Credit Hours:** (3) **Description** An examination of the long tradition of sexualities within sociology. The course covers the

theoretical foundations of this field of research methods and ethics, an empirical studies of sexuality.

### **SOCI 8480 - Sociology of Childhood and Youth**

**Credit Hours:** 3 **Description** This course will examine how children shape and are shaped by the social worlds in which they live. We will examine how the meaning and experience of childhood varies historically and across current social locations. We will focus on several topics during the semester: the history of childhood, parenting and its effect on youth, how your experience education, play, peer relationships, health and deviance. We also focus on issues of gender, social class, race/ethnicity and sexuality as they relate to childhood and youth. **PREREQUISITE(S):** Graduate standing

### **SOCI 8511 - Theories Of Deviance**

**Credit Hours:** (3) **Description** A seminar in the sociological approaches to the study of deviance and social disorganization with an emphasis on current sociological theory and research.

### **SOCI 8612 - Social Demography**

#### **Credit Hours:** 3 **Description**

The purpose of this course is to provide an overview of the field of social demography. We will cover the basic population processes—fertility, mortality, and migration/distribution—along with introductions to theory, data, and methods. The two main goals of this course are to: 1) introduce students to both classic and current literature in the field of social demography and 2) teach students the techniques used to analyze demographic data. Our focus on "social demography" reflects the orientation of understanding population processes through a sociological lens. This does not eliminate other population perspectives (e.g., geographic, biological, economic, etc.) from consideration in this course, but the focus here tends to be on the social aspects.

**PREREQUISITE(S):** Graduate standing

### **SOCI 8655 - Socio Found Cmnty Stds**

**Credit Hours:** (3) **Description** Ecological, interaction, and social system perspectives for community analysis; contemporary applications of theories within context of American society; implications of current changes for community life and social stratification, leadership and power structure, social differentiation and integration, community development, and ideology.

### **SOCI 8711 - Sem Globaltn/Soc Chng**

**Credit Hours:** (3) **Description** Sociological and historical perspectives on social, political, and economic differences among countries and regions of the world; global/transnational processes in uneven development; state formation; class transformation; democracy.

### **SOCI 8721 - Sem Social Movements**

**Credit Hours:** (3) **Description** Origins, organization, and consequences of intentional, collective efforts at social change; social movement theory; in-depth examination of selected movements, both domestic and international.

### **SOCI 8751 - Sem Socio Social Psyc**

**Credit Hours:** (3) **Description** Advanced course in sociological social psychology surveying various classical and contemporary microsociological theories and methodological orientations. Topics include symbolic interaction, role theory, dramaturgical analysis, self and socialization, social exchange, group dynamics and many other relevant current research and theoretical perspectives.

### **SOCI 8811 - Sociology of Organizations**

**Credit Hours:** (3) **Description** Examination of competing theories of formal and complex organizations and accompanying empirical research on macro organizational behavior, the internal and external dynamics of organizations, the relationships between organizations and institutions, and organizational change.

### **SOCI 8830 - Seminar In Family**

**Credit Hours:** (3) **Description** An advanced course that is primarily concerned with research findings in the area of family disorganization, changes in family structure and function, parent-child interaction, working mothers, and problems of aging.

### **SOCI 8851 - Medical Sociology**

**Credit Hours:** (3) **Description** Sociological understandings of society, demographic processes, organizations, behavior, and health.

### **SOCI 8852 - Soci Mental Illness**

**Credit Hours:** (3) **Description** Social meaning of mental illness, with special emphasis on the cultural, organizational, and behavioral contexts of the occurrence and management of mental illness.

### **SOCI 8860 - Sem Soci Of Religion**

**Credit Hours:** (3) **Description** A sociological examinations of religious institutions; cultural and social factors associated with religious structure, religious values, and religious behavior ; secularization of culture and change of social structure; analysis of religious organizations, religious leadership, and religious movements.

### **SOCI 8901-8909 - Special Topics in Sociology**

**Credit Hours:** (1-3)

### **SOCI 8912 - Directed Indiv Study**

**Credit Hours:** (1-4) **Description** Individually directed advanced reading and/or research in special areas of interest. NOTE: Course may be repeated for a maximum of 6 hours credit.

## **Spanish**

### **SPAN 6306 - Applied Span Linguistics**

**Credit Hours:** (3) **Description** (6501). Current research in linguistics, psycholinguistics, and sociolinguistics and their contribution to second language teaching and second language learning.

### **SPAN 6307 - Adv Grammar/Writing**

**Credit Hours:** (3) **Description** Special problems in Spanish grammar pertaining to the preterite and the imperfect, ser" and "estar May be repeated

### **SPAN 6308 - Adv Grammar/Speech**

**Credit Hours:** (3) **Description** Special problems in Spanish grammar pertaining to prepositions, placement of descriptive adjectives, passive voice, reflexive substitute, past participle in absolute constructions, and reflexive pronouns; also emphasizes speech production, vocabulary, and idiomatic expressions. Strongly recommended for MA students who have not taken this course at the undergraduate level. Since

this is a 4000/6000 level course it cannot count twice toward graduation.

### **SPAN 6410 - Spanish Lit/Civiztn**

**Credit Hours:** (3) **Description** Survey of literary movements and major figures with readings in literature and civilization. Strongly recommended for MA students who have not taken this course at the undergraduate level. Since this is a 4000/6000 level course it cannot count twice toward graduation.

### **SPAN 6510 - Spanish Amer Lit/Civiz**

**Credit Hours:** (3) **Description** Survey of literary movements and major figures with readings in literature and civilization. Strongly recommended for MA students who have not taken this course at the undergraduate level. Since this is a 4000/6000 level course it cannot count twice toward graduation. May be repeated for credit when topic varies.

### **SPAN 6563 - Hispanic Literature Genres**

**Credit Hours:** (3) **Description** Study of literary genres with concentration on Hispanic literature; selections from origins to present time; emphasis on textual analysis. Strongly recommended for MA students who have not taken this course at the undergraduate level. It is necessary to clarify that students who have already taken this course as 4563 cannot take 6563 since it will not count toward graduation.

### **SPAN 7101 - Intro Hispnc Cltr/Bus**

**Credit Hours:** (3) **Description** Hispanic community and family, customs, geography, demography of Spain and Spanish America; United States business in Latin America and Hispanic business in the United States. Course is conducted in Spanish. Open only to students admitted to International MBA program.

### **SPAN 7102 - Comm Hispanic World**

**Credit Hours:** (3) **Description** Hispanic markets and techniques of penetrating them; international advertising, import-export and economic review of Hispanic nations; history and circumstances of the Hispanic corporate world. Course is conducted in Spanish. Open only to students admitted to International MBA program.

### **SPAN 7103 - Span Comm/Corresp Doc I**

**Credit Hours:** (3) **Description** Various letters and documents for conducting business among Hispanic nations. Conducted in Spanish. May be repeated for a maximum of 3 credits

### **SPAN 7201 - Wkshp Spanish Language**

**Credit Hours:** (3) **Description** Idiomatic construction, word formation, culturally connotated vocabulary and modern style techniques through intensive text analysis and writing. RECOMMENDED: SPAN 6302.

### **SPAN 7301 - Spanish Phonology**

**Credit Hours:** (3) **Description** (6301). Principles of analysis of the sound system of human language; general sound system (phonetics) of Spanish; and phonemic contrastive analysis of sound systems of Spanish and English.

### **SPAN 7302 - Span Syntax & Semantics**

**Credit Hours:** (3) **Description** Spanish syntax and compositional semantics: constituent structure, syntactic categories and grammatical relations, prepositional semantics, quantification, modality, and tense.

### **SPAN 7304 - Evolution Of Spanish**

**Credit Hours:** (3) **Description** (6304). General history of the Spanish language based on political and cultural history of Spain and Spanish America; history of sound system, grammatical structures, word borrowings, and changes in meaning.

### **SPAN 7305 - Span Dialectolog**

**Credit Hours:** (3) **Description** Fundamental notions of language variation, regional and social varieties, stylistic varieties and linguistic demography of general features of Spanish with respect to phonology, morphosyntax, and semantics.

### **SPAN 7306 - Spanish in the U.S.**

**Credit Hours:** (3) **Description** Study of linguistic features of Spanish in the U.S. and the sociolinguistic factors (historical, political, social and cultural) that affect U.S. Spanish.

### **SPAN 7420 - Medieval Span Lit**

**Credit Hours:** (3) **Description** (6420). Reading of Old Spanish; Medieval Spanish literature from Mozarabic lyric through La Celestina.

### **SPAN 7421 - The Golden Age**

**Credit Hours:** (3) **Description** Don Quixote and other classic works of the sixteenth and seventeenth centuries.

### **SPAN 7430 - 18th/19th Cent Span Lit**

**Credit Hours:** (3) **Description** (6430). Romantic and post-romantic poetry and drama; costumbrismo and rise of regional novel, realistic novel, and naturalistic novel.

### **SPAN 7431 - 20th Cent Peninslr Lit**

**Credit Hours:** (3) **Description** A look at different aspects of the literary culture of this century through various genres (poetry, novel, theatre and film). Special attention dedicated to Modernism, the Civil War, Literature during the Franco years and Postmodernism.

### **SPAN 7451 - Studies Spanish Culture**

**Credit Hours:** (3) **Description** Literary history of Spanish autonomous regions as viewed through important writers; emphasis on regional dialects, character, economy, and culture; readings and discussions in Spanish. May be repeated for a maximum of 6 credit hours. RECOMMENDED: SPAN 6410.

### **SPAN 7452 - 19th-20th Cent Hisp Cult/Lit**

**Credit Hours:** (3) **Description** Literary developments and major cultural events affecting Spain and Latin America, including issues pertaining to the question of national identity, modernismo, the Generation of 1898, the narrative of the Mexican revolution, and Hispanic avant-garde artistic movements.

### **SPAN 7453 - Studies Latn Am Culture**

**Credit Hours:** (3) **Description** Literary survey of social issues that affect perceptions of Latin America, its peculiar problems and its social upheaval; readings and discussions in Spanish. May be repeated for a maximum of 6 credit hours. RECOMMENDED: SPAN 6510.

### **SPAN 7532 - Span American Drama**

**Credit Hours:** (3) **Description** (6532). Development of the drama in Spanish America, with an emphasis on the twentieth century. May be repeated for a maximum of 9 credits

### **SPAN 7561 - Pre-Cntmp Sp Am Prose**

**Credit Hours:** (3) **Description** Evolution of the Spanish American novel and short story from their beginnings through early twentieth century.

### **SPAN 7562 - Cntmp Sp Am Prose Fctn**

**Credit Hours:** (3) **Description** Representative Spanish American novels and short stories of the twentieth century since 1940.

### **SPAN 7591 - Seminar Sp Amer Lit**

**Credit Hours:** (3) **Description** Topics in Spanish American literature designed to be of special interest for the advanced graduate student. May be repeated for a maximum of 9 credit hours.

### **SPAN 7691 - Rsrch Hispanic Studies**

**Credit Hours:** (1-6) **Description** May be repeated for credit toward the concentration in Spanish up to 12 hours.

### **SPAN 7692 - Research in Lit and Culture**

**Credit Hours:** (3-6) **Description** Directed readings in the field. Several reports and a research paper will be required. May be repeated for credit toward the concentration in Spanish up to 9 hours.

### **SPAN 7693 - Hispanic Cinema**

**Credit Hours:** (3) **Description** A survey of Hispanic film; emphasis on historical, social and political issues. Study of Latin American and/or Spanish cinematic production through the analysis of representative films. Readings and discussions are in Spanish. Recommended: SPAN 4510-6510. May be repeated

### **SPAN 7790-7799 - Special Topics in Hispanic Literature and Linguistics**

**Credit Hours:** (3) **Description** Topics in Spanish Linguistics, Literature or Culture designed to be of special interest for the advanced student in Spanish. Selected topics in Hispanic

literature and linguistics; may include, but not limited to Latin-American short fiction, nineteenth century Peninsular literature, Latin-American drama, and variety of sociolinguistic studies. May be repeated for a maximum of 12 credit hours. **PREREQUISITE(S):** Permission of instructor.

### **SPAN 7895 - Teaching SPAN for Spec Purpos**

**Credit Hours:** (3) **Description** Methodology, theory, practice of teaching Spanish for specific purposes (medical, business, art, etc). Course will be conducted in Spanish.

### **SPAN 7896 - Applied World Languages for Specific Purposes**

**Credit Hours:** 3 **Description** Theoretical frameworks for world languages for specific purposes (WLSP) as a critical pedagogy, intercultural communicative competence, WLSP research in global and domestic settings, experiential language learning, community service learning, and WLSP course design. Standard Letter

### **SPAN 7897 - Research in Spanish for Professional Purposes**

**Credit Hours:** 3 **Description** An overview of research methods commonly used in World Languages for Specific Purposes. Elements of quantitative and qualitative research design. Standard Letter

## **Special Education**

### **SPED 6000 - Meth/Mat Modrt/Sevr Dis**

**Credit Hours:** (3) **Description** Curriculum, methods, and materials applicable to special educational needs of moderately/severely disabled learners, emphasizing educational and vocational skills that facilitate normalization and independent living.

### **SPED 6111 - Intro/Applied Behav Analysis**

**Credit Hours:** (3) **Description** Principles and procedures of applied behavior analysis with emphasis on application to change human behavior.

### **SPED 6112 - Assess/Measure/Appl Behav Anly \*\***

**Credit Hours:** (3) **Description** Methods involved in conducting and interpreting common behavioral assessments, measuring behavior, and data analysis using single subject designs. **PREREQUISITE(S):** SPED 6111

### **SPED 6113 - Appl Behav Intervent/Strategi**

**Credit Hours:** (3) **Description** Overview of the instructional strategies developed from applied behavior analysis including Direct Instruction, Precision Teaching, Discrete Trial Training, and others; knowledge and skills to provide effective instruction to students with disabilities. **PREREQUISITE(S)** or **COREQUISITE(S):** SPED 6111

### **SPED 6114 - Practitioner Issues/ABA**

**Credit Hours:** (3) **Description** Advanced concepts in Applied Behavior Analysis; ethical issues, behavior change systems, staff training, and professional conduct. **PREREQUISITE(S):** SPED 6111

### **SPED 6513 - Asst Tech/Trans Instruc**

**Credit Hours:** (3) **Description** Transition issues, life skills, and vocational training to prepare students with significant exceptionalities for community living; focuses on legal and family concerns and effective transition programming; includes familiarity with available community resources and interagency collaboration; emphasizes assistive technology and augmentative/alternative communication as major tools for community integration.

### **SPED 6601 - Student Phys/Health Dis**

**Credit Hours:** (3) **Description** Emphasizes physical and educational modifications to facilitate learning and vocational skills; examines accessibility, movement patterns, prosthetic and augmentative communication devices, and supportive medical procedures. Includes practicum with students with physical/health impairments.

### **SPED 6900 - Consultn Schl/Fmly/Cmty**

**Credit Hours:** (3) **Description** Current professional development issues that impact educator interaction with students, parents, and other professionals including the development of communication and consultation skills.

### **SPED 7000 - Intro Excpntional Learnr \*\***

**Credit Hours:** (3) **Description** Study of the relevant research dealing with the physical, mental, emotional, and social traits of all types of individuals who are exceptional; consideration of major current problems and practices in the development of various programs. Field Experience: Required. NOTE: Not required if equivalent course taken at the undergraduate level. Substitutions must be approved by advisor.

### **SPED 7001 - Test Meas Excp Chl/Adul \*\***

**Credit Hours:** (3) **Description** Overview of psychoeducational assessment practices and issues with emphasis on educational and psychological tests used in special education; focus on informed interpretation of test data and implications for instructional practice. Field experience: Required. **PREREQUISITE(S):** SPED 7000

### **SPED 7002 - Indep Stdy Spec Educ**

**Credit Hours:** (1-6) **Description** Opportunity for self-directed, independent study in special education. **PREREQUISITE(S):** Permission of instructor. Grades of A-F will be given.

### **SPED 7010 - Ethical Issues in ABA**

**Credit Hours:** (3) **Description** This course will provide an overview of ethical and legal issues faced by the behavior analyst. This course covers the Behavior Analyst Certification Board's guidelines for responsible and professional conduct, ethical issues related to the application of Applied Behavior Analysis in Special Education, and other ethical and legal considerations.

### **SPED 7025 - Microcomputers In Sped**

**Credit Hours:** (3) **Description** Emphasis on matching software programs with the unique learning needs of students with disabilities; adaptive interfacing techniques for students who have physical and/or sensory disabilities are also addressed.

### **SPED 7042 - Fld Exp/Comprehen Sped**

**Credit Hours:** (3-6) **Description** Supervised experience(s) with individuals with moderate to severe disabilities in cooperation with university, local, state, and/or national education personnel. **PREREQUISITE(S):** Permission of instructor. Grades of S, U, or I will be given.

### **SPED 7050 - Teach Exceptnl Learner**

**Credit Hours:** (2-3) **Description** Overview of special education including characteristics and education of students with various exceptionalities; emphasis on developing skills for effective teaching of exceptional students in the regular classroom.

### **SPED 7060-7069 - Special Topics in Special Education**

**Credit Hours:** (1-3) **Description** Current topics in special education. May be repeated with a change in topic.

### **SPED 7101 - Foundations E Chld Sped**

**Credit Hours:** (3) **Description** Overview of early childhood special education including current issues, laws, and practices that influence programs serving children with disabilities birth through age eight; emphasis on research dealing with physical, mental, emotional, and social characteristics of young children with various exceptionalities. Clinical/Field Experience Required.

### **SPED 7105 - Lang/Comm Inclusive Classrm**

**Credit Hours:** (3) **Description** Instructing students with typical and exceptional communication needs. Includes interpreting speech/language assessment reports and designing instruction. Also use of augmentative and alternative communication devices and working with non-native English speaking students. Field Experience: Required. **PREREQUISITE(S):** SPED 7000 or equivalent.

### **SPED 7106 - Prof/Eth Prac Inclusive Class**

**Credit Hours:** (3) **Description** Education policy and practice: accountability, ethics, advocacy, and social challenges. Working with families and community stakeholders is highlighted. Instructional planning includes creating individual education plans, individual family service plans and transition planning. **PREREQUISITE(S):** SPED 7000 or equivalent.

### **SPED 7121 - Ed Prog Presc Ed/Disbl \*\***

**Credit Hours:** (3) **Description** Methods involved in developmental assessment and educational planning for children with disabilities in pre-school years. **PREREQUISITE(S):** SPED 7000 OR SPED 7101-SPED 8101

**SPED 7141 - Field Exper Early Child \*\***

**Credit Hours:** (3-6) **Description** Observation and supervised experience in early childhood special education settings.

**PREREQUISITE(S):** ECED 6540 and SPED 7121-SPED 8121 Grades of S, U, or I will be given.

**SPED 7201 - Edu Prog for Stud Learn Disab**

**Credit Hours:** (3) **Description** Examination of etiological, psychological, social, and physical conditions related to the educational performance of individuals with disabilities in developmental life periods.

**SPED 7203 - Ed Prog for Stud Emot BehavDis**

**Credit Hours:** (3) **Description** Characteristics of persons with emotional and behavioral disorders; emphasis on social, psychological, and biological theories of causality, assessment, and education with a variety of emotional and/or behavioral problems. **PREREQUISITE(S):** Permission of instructor.

**SPED 7205 - Prin/Thry Inclusive Education \*\***

**Credit Hours:** (3) **Description** This course will explore the foundations of inclusive education. Research, policy, and professional standards which are the basis of inclusive practices will be discussed. In addition, the examination of social issues that support the evolution of the inclusive movement in educational environments will occur.

**SPED 7206 - Special Education Law \*\***

**Credit Hours:** (3) **Description** The essential elements of applicable laws will be presented. Emphasis will be placed on the influence of case law on the practice of teaching inclusive environments. Implementation of best practices in inclusive settings and evaluation as it relates to the incorporation of research in past and present special education law is the focus of this course.

**SPED 7207 - Ldrshp/Facil Inclusion/Edu Set \*\***

**Credit Hours:** (3) **Description** This course promotes the development of inclusion facilitators, professional

development design and leaders. Presentation and design of the flexible schedules and grouping will occur. Emphasis will be placed on the identification of teaching partners and facilitating the cooperative educator process. Handling sensitive issues, setting up venues, and designing materials will be presented.

**SPED 7211 - Academic Instruct Sped \*\***

**Credit Hours:** (3) **Description** Academic methods, remediation, and educational planning for individuals with disabilities. Field Experience Required. **PREREQUISITE(S):** SPED 7000 or equivalent.

**SPED 7212 - Content Methods in Special Edu \*\***

**Credit Hours:** (3) **Description** Study of best practices and methods for mathematics, social studies and science instruction presently being used in special education and inclusive settings. Also curriculum for transition and daily living skills. The use of assistive technology for education is included. Field Experience Required. **PREREQUISITE(S):** SPED 7000 or equivalent.

**SPED 7221 - Behavior Mgmt Spec Ed \*\***

**Credit Hours:** (3) **Description** Methods of changing behaviors of individuals with mild to severe disabilities in various educational settings. Field Experience Required. **PREREQUISITE(S):** SPED 7000 or equivalent.

**SPED 7222 - Meth Tech Tchg Eml Dstb**

**Credit Hours:** (3) **Description** Procedures for educating individuals with emotional disturbance; emphasis on teaching behaviors, psycho-educational management of behavior, and effective teaching techniques. **PREREQUISITE(S):** Permission of instructor.

**SPED 7224 - Tchng Childrn Deaf/Hh**

**Credit Hours:** (3) **Description** Overview of teaching for children who are deaf or hard of hearing; addresses philosophical and historical perspectives, methodologies, assessment, and intervention; discusses curriculum planning, hearing-aid technology, cochlear implants, and career development.

**SPED 7225 - Tchng Spch/Lang Deaf/Hh**

**Credit Hours:** (3) **Description** Focuses on the acquisition of basic speech/language skills in the development of effective communication in children with hearing impairments.

### **SPED 7226 - Manual Communication**

**Credit Hours:** (3) **Description** Develops beginning competencies in manual communication modes, both fingerspelling and signing, emphasizing accurate, clear fingerspelling and the ability to read fingerspelling presented slowly; also introduces basic signs in American Sign Language (ASL). Practice will be provided.

### **SPED 7227 - Tchng Read Chld Deaf/Hh**

**Credit Hours:** (3) **Description** Modern trends, lesson planning, teaching strategies, and assessment tools in reading instruction for children with hearing impairment.

### **SPED 7241 - Superv Practicm In Sped**

**Credit Hours:** (3-9) **Description** Enhanced practicum experience in settings with individuals who have disabilities. **PREREQUISITE(S):** Permission of instructor. Grades of S, U, or I will be given.

### **SPED 7401 - Psyc Soc Aspct Lrn Dsab**

**Credit Hours:** (3) Former: (RECR 7145, SLC 7142) **Description** Psychological, social, and educational characteristics of individuals with learning disabilities; theories and philosophies regarding the treatment, etiology, and management considerations stressed.

### **SPED 7411 - Meth Teach Learnng Disab**

**Credit Hours:** (3) **Description** Remedial approaches for children with learning disabilities; emphasis on developmental sequence and educational practices.

### **SPED 7511 - Intellectual Disabilities**

**Credit Hours:** (3) **Description** Emphasis on diagnostic and pedagogical techniques used with children with intellectual disabilities at the pre-academic level. **PREREQUISITE(S):** Permission of instructor.

### **SPED 7513 - Scndry Schl Transition**

**Credit Hours:** (3) **Description** Emphasizes transition issues, life skills, and vocational education to prepare students with exceptionalities for life after secondary school; also focuses on legal issues, family concerns, and effective transition programming. Familiarity with available community resources and the importance of interagency collaboration stressed.

### **SPED 7514 - Intro/Appl Behav Anlys**

**Credit Hours:** (3) **Description** Overview of the principles, processes, concepts, and ethics of behaviorism and behavior analysis.

### **SPED 7516 - Adv Prin/Conc Appl Behv**

**Credit Hours:** (3) **Description** In-depth examination of the philosophy, processes, concepts, and the principles of behaviorism and applied behavior analysis. **PREREQUISITE(S):** PREREQUISITE(S): SPED 7514/8514 with a grade of B (3.0) or higher.

### **SPED 7517 - Func Anlys/Treat Prob Behv**

**Credit Hours:** (3) **Description** Examines principles, issues, approaches, and strategies for conducting functional behavior assessment and functional analysis. **PREREQUISITE(S):** SPED 7514 - Intro/Appl Behav AnlysPREREQUISITE(S): SPED 7514/8514 with a grade of B (3.0) or higher.

### **SPED 7518 - Evidence-Based Prac in ABA**

**Credit Hours:** (3) **Description** Study of evidence-based behavior-change strategies developed from the field of applied behavior analysis. **PREREQUISITE(S):** SPED 7514 - Intro/Appl Behav AnlysPREREQUISITE(S): SPED 7514/8514 with a grade of B (3.0) or higher.

### **SPED 7519 - Prac/Appld Behav Anlys**

**Credit Hours:** (3-9)

**Description** Supervised experience in various settings; requires approximately 125 hours of field experience per month to meet BACB required 2000 hrs. May be repeated for 9 credit hours. On campus seminars are required. Students must have a practicum site and a Board Certified Behavior supervisor. 9 **PREREQUISITE(S):** SPED 7010/SPED 8010, SPED 7514/SPED 8514, SPED 7517/SPED 8517, SPED 7518/SPED 8518 with a grade of 3.0 or higher and permission of instructor.



### SPED 7520 - Behaviorism Seminar

**Credit Hours:** (3) **Description** Provides an overview of the application of behavior analytic principles to common behavior problems exhibited by children both with and without disabilities. **PREREQUISITE(S):** SPED 7514 - Intro/Appl Behav Anlys **PREREQUISITE(S):** SPED 7514/8514 with a grade of B (3.0) or higher.

### SPED 7521 - Behavior Analytic Applications

**Credit Hours:** (3) Former: 7521 **Description** An overview of the current research and evidence-based practices in different fields of applications of behavior science. **PREREQUISITE(S):** SPED 7514 - Intro/Appl Behav Anlys **PREREQUISITE(S):** SPED 7514/8514 with a grade of B (3.0) or higher.

### SPED 7522 - Tiered Interventions

**Credit Hours:** (3) Former: (SLC 7332, 7420) **Description** An advanced study of the science of implementing and assessing Multi-Tiered Level of Supports, Response to Intervention (RtI), and Positive Behavioral Intervention Supports (PBIS) for early intervention, and examining the needs of a wide range of diverse learners with the goal of matching instruction to improve student outcomes. **PREREQUISITE(S):** Permission of instructor.

### SPED 7523 - SPED Research/Dissem

**Credit Hours:** (3) **Description** This course helps students acquire and develop skills for professional writing and publication. Gives guidance in conducting literature reviews and evaluating research practices appropriate for students with disabilities and/or special education settings. Procedures for preparing and submitting manuscripts to professional journals will be covered.

### SPED 7600 - Intro to Aut Spec Dis

**Credit Hours:** (3) **Description** This course will provide an overview of autism spectrum disorders from the diagnosis and early intervention phase to working with families, therapists, and staff in both educational and community settings. The course will be grounded in research-based theory and will assist the learner with evidence-based decision making from a practical standpoint. Legal and ethical issues will be discussed

related to diagnosis, treatment selections, and working effectively with families.

### SPED 7601 - ASD: Class Mgmt and Design

**Credit Hours:** (3) **Description** This course will introduce common behavior management strategies shown to be effective for children with autism. These strategies will focus on both individual and group contingencies. Further, this course will discuss functional behavior assessment interpretation and treatment design, as well as data collection methods. **PREREQUISITE(S):** SPED 7600 (Introduction to Autism Spectrum Disorders) and SPED 7602 (ASD: Instruct Methods I).

### SPED 7602 - ASD: Instruct Methods I

**Credit Hours:** (3) **Description** This course will introduce evidence based methods of instruction specific to teaching academic and social skills to children with autism. Additionally, this course will focus on distinguishing between evidence-based and unsupported but common strategies in treatment of autism.

### SPED 7603 - ASD: Instruct Methods II

**Credit Hours:** (3) **Description** This course will introduce methods of instruction specific to facilitating communication for students with autism. Additionally, this course will focus on assistive technologies related to the academic instruction, communication (AAC) and behavior modification of students with autism. Course content will emphasis data driven instructional practice, manual and technology-based data acquisition practices, data presentation and using data to drive instructional practice. **PREREQUISITE(S):** SPED 7600 7600 (Intro to Autism Spectrum Disorders), SPED 7601 (Classroom Design and Data Collection), SPED 7602 (ASD: Instruct Methods I).

### SPED 7900 - Advanced Practicum/Capstone

**Credit Hours:** (3) **Description** Designed as a culminating experience exposing students to the application of behavior analytic strategies and tactics in a variety of settings. Direct participation is required for the successful completion of a field-study, on-site project or other classroom based experience. This course must be taken during the last semester of coursework. **PREREQUISITE(S):** Permission of instructor.

### **SPED 8001 - Test Meas Excp Chl/Adul**

**Credit Hours:** (3) **Description** Overview of psychoeducational assessment practices and issues with emphasis on educational and psychological tests used in special education; focus on informed interpretation of test data and implications for instructional practice. Field Experience Required. **PREREQUISITE(S):** SPED 7000

### **SPED 8002 - Indep Stdy Spec Educ**

**Credit Hours:** (1-6) **Description** Opportunity for self-directed, independent study in special education.

### **SPED 8010 - Ethical Issues in ABA**

**Credit Hours:** (3) **Description** This course will provide an overview of ethical and legal issues faced by the behavior analyst. This course covers the Behavior Analyst Certification Board's guidelines for responsible and professional conduct, ethical issues related to the application of Applied Behavior Analysis in Special Education, and other ethical and legal considerations.

### **SPED 8041 - Fld Exp/Modified Sped**

**Credit Hours:** (3-6) **Description** Supervised experience(s) with individuals with mild disabilities in cooperation with university, local, state, and/or national educational personnel. **PREREQUISITE(S):** Permission of instructor. Grades of S, U, or I will be given.

### **SPED 8042 - Fld Exp/Comprehen Sped**

**Credit Hours:** (3-6) **Description** Supervised experience(s) with individuals with moderate to severe disabilities in cooperation with university, local, state, and/or national education personnel. **PREREQUISITE(S):** Permission of instructor. Grades of S, U, or I will be given.

### **SPED 8060-8069 - Special Topics in Special Education**

**Credit Hours:** (1-3) **Description** Current topics in special education. May be repeated with a change in topic.

### **SPED 8101 - Foundations E Chld Sped**

**Credit Hours:** (3) **Description** Overview of early childhood special education including current issues, laws, and practices

that influence programs serving children with disabilities birth through age eight; emphasis on research dealing with physical, mental, emotional, and social characteristics of young children with various exceptionalities. Clinical/Field Experience Required.

### **SPED 8121 - Ed Prog Presc Ed/Disbl**

**Credit Hours:** (3) **Description** Methods involved in developmental assessment and educational planning for children with disabilities in pre-school years. **PREREQUISITE(S):** SPED 7000 OR SPED 7101-SPED 8101

### **SPED 8141 - Field Exper Early Child**

**Credit Hours:** (3-6) **Description** Observation and supervised experience in early childhood special education settings. **PREREQUISITE(S):** ECED 6540 and SPED 7121-SPED 8121 Grades of S, U, or I will be given.

### **SPED 8201 - Edu Prog for Stud Learn Disab**

**Credit Hours:** (3) **Description** Examination of etiological, psychological, social, and physical conditions related to the educational performance of individuals with disabilities in developmental life periods.

### **SPED 8203 - Ed Prog for Stud Emot BehavDis**

**Credit Hours:** (3) **Description** Characteristics of persons with emotional and behavioral disorders; emphasis on social, psychological, and biological theories of causality, assessment, and education with a variety of emotional and/or behavioral problems. **PREREQUISITE(S):** Permission of instructor.

### **SPED 8205 - Prin/Thry Inclusive Education**

**Credit Hours:** (3) **Description** This course will explore the foundations of inclusive education. Research, policy, and professional standards which are the basis of inclusive practices will be discussed. In addition, the examination of social issues that support the evolution of the inclusive movement in educational environments will occur.

### **SPED 8206 - Special Education Law**

**Credit Hours:** (3) **Description** The essential elements of applicable laws will be presented. Emphasis will be placed on the influence of case law on the practice of teaching inclusive environments. Implementation of best practices in inclusive settings and evaluation as it relates to the incorporation of research in past and present special education law is the focus of this course.

### **SPED 8207 - Ldrshp/Facil Inclusion/Edu Set**

**Credit Hours:** (3) **Description** This course promotes the development of inclusion facilitators, professional development design and leaders. Presentation and design of the flexible schedules and grouping will occur. Emphasis will be placed on the identification of teaching partners and facilitating the cooperative educator process. Handling sensitive issues, setting up venues, and designing materials will be presented.

### **SPED 8211 - Academic Instruct Sped**

**Credit Hours:** (3) **Description** Academic methods, remediation, and educational planning for individuals with disabilities. Field Experience Required.

### **SPED 8212 - Content Methods in Special Edu**

**Credit Hours:** (3) **Description** Study of best practices and methods for mathematics, social studies and science instruction presently being used in special education and inclusive settings. Also curriculum for transition and daily living skills. The use of assistive technology for education is included. Field Experience Required.

### **SPED 8221 - Behavior Mgmt Spec Ed**

**Credit Hours:** (3) **Description** Methods of changing behaviors of individuals with mild to severe disabilities in various educational settings. Field Experience Required.

### **SPED 8222 - Meth Tech Tchg Eml Dstb**

**Credit Hours:** (3) **Description** Procedures for educating individuals with emotional disturbance; emphasis on teaching behaviors, psycho-educational management of behavior, and effective teaching techniques. **PREREQUISITE(S):** Permission of instructor.

### **SPED 8401 - Psyc Soc Aspct Lrn Dsab**

**Credit Hours:** (3) **Description** Psychological, social, and educational characteristics of individuals with learning disabilities; theories and philosophies regarding the treatment, etiology, and management considerations stressed.

### **SPED 8411 - Meth Teach Learnng Disab**

**Credit Hours:** (3) **Description** Remedial approaches for children with learning disabilities; emphasis on developmental sequence and educational practices.

### **SPED 8511 - Intellectual Disabilities**

**Credit Hours:** (3) **Description** Emphasis on diagnostic and pedagogical techniques used with children with intellectual disabilities at the pre-academic level. **PREREQUISITE(S):** Permission of Instructor.

### **SPED 8513 - Scndry Schl Transition**

**Credit Hours:** (3) **Description** Emphasizes transition issues, life skills, and vocational education to prepare students with exceptionalities for life after secondary school; also focuses on legal issues, family concerns, and effective transition programming. Familiarity with available community resources and the importance of interagency collaboration stressed.

### **SPED 8514 - Intro/Appl Behav Anlys**

**Credit Hours:** (3) **Description** Overview of the principles, processes, concepts, and ethics of behaviorism and behavior analysis.

### **SPED 8516 - Adv Prin/Conc Appl Behv**

**Credit Hours:** (3) **Description** In-depth examination of the philosophy, processes, concepts, and the principles of behaviorism and applied behavior analysis.

**PREREQUISITE(S):** SPED 7514 - Intro/Appl Behav Anlys  
**PREREQUISITE(S):** SPED 7514/8514 with a grade of B (3.0) or higher.

### **SPED 8517 - Func Anlys/Treat Prob Behv**

**Credit Hours:** (3) **Description** Examines principles, issues, approaches, and strategies for conducting functional behavior assessment and functional analysis. **PREREQUISITE(S):**

SPED 7514 - Intro/Appl Behav Anlys  
PREREQUISITE(S):  
SPED 7514/8514 with a grade of B (3.0) or higher.

### SPED 8518 - Evidence-Based Prac in ABA

**Credit Hours:** (3) **Description** Study of evidence-based behavior-change strategies developed from the field of applied behavior analysis. **PREREQUISITE(S):** SPED 7514 - Intro/Appl Behav Anlys  
**PREREQUISITE(S):** SPED 7514/8514 with a grade of B (3.0) or higher.

### SPED 8519 - Prac/Appld Behav Anlys

**Credit Hours:** (3-9) **Description** Supervised experience in various settings; requires approximately 125 hours of field experience per month to meet BACB required 2000 hrs. May be repeated for 9 credit hours. On campus seminars are required. Students must have a practicum site and a Board Certified Behavior supervisor. 9 **PREREQUISITE(S):** SPED 7010/SPED 8010, SPED 7517/SPED 8517, SPED 7518 /SPED 8518 with a grade of 3.0 or higher and permission of instructor.

### SPED 8520 - Behaviorism Seminar

**Credit Hours:** (3) **Description** Provides an overview of the application of behavior analytic principles to common behavior problems exhibited by children both with and without disabilities. **PREREQUISITE(S):** SPED 7514 - Intro/Appl Behav Anlys  
**PREREQUISITE(S):** SPED 7514/8514 with a grade of B (3.0) or higher.

### SPED 8521 - Behavior Analytic Applications

**Credit Hours:** (3) Former: 8521 **Description** An overview of the current research and evidence-based practices in different fields of applications of behavior science. **PREREQUISITE(S):** SPED 7514 - Intro/Appl Behav Anlys  
**PREREQUISITE(S):** SPED 7514/8514 with a grade of B (3.0) or higher.

### SPED 8522 - Tiered Interventions

**Credit Hours:** (3) **Description** An advanced study of the science of implementing and assessing Multi-Tiered Level of Supports, Response to Intervention (RtI), and Positive Behavioral Intervention Supports (PBIS) for early intervention, and examining the needs of a wide range of diverse learners with the goal of matching instruction to improve student outcomes.

### SPED 8523 - SPED Research/Dissem

**Credit Hours:** (3) **Description** This course helps students acquire and develop skills for professional writing and publication. Gives guidance in conducting literature reviews and evaluating research practices appropriate for students with disabilities and/or special education settings. Procedures for preparing and submitting manuscripts to professional journals will be covered.

### SPED 8524 - Adv Seminar In SPED Res

**Credit Hours:** (3-6) **Description** Survey and analysis of reading research to create background information for study of selected topics in special education; translating research into practical applications in special education program settings. **PREREQUISITE(S):** EDPR 7521 or EDPR 7523 , EDPR 8541, EDPR 8561 or permission of instructor. Grades of A-F will be given.

### SPED 8600 - Intro to Aut Spec Dis

**Credit Hours:** (3) **Description** This course will provide an overview of autism spectrum disorders from the diagnosis and early intervention phase to working with families, therapists, and staff in both educational and community settings. The course will be grounded in research-based theory and will assist with the learner with evidence-based decision making from a practical standpoint. Legal and ethical issues will be discussed related to diagnosis, treatment selections, and working effectively with families.

### SPED 8601 - ASD: Class Mgmt and Design

**Credit Hours:** (3) Former: (ISDS 7020) **Description** This course will introduce common behavior management strategies shown to be effective for children with autism. These strategies will focus on both individual and group contingencies. Further, this course will discuss functional behavior assessment interpretation and treatment design, as well as data collection methods.

### SPED 8602 - ASD: Instruct Methods I

**Credit Hours:** (3) Former: (ISDS 7080) **Description** This course will introduce evidence-based methods of instruction specific to teaching academic and social skills to children with autism. Additionally, this course will focus on distinguishing between evidence-based and unsupported but common strategies in treatment of autism. Course may be repeated for a maximum of 6 credits.

## SPED 8603 - ASD: Instruct Methods II

**Credit Hours:** (3) Former: (ISDS 7110) **Description** This course will introduce methods of instruction specific to facilitating communication for students with autism. Additionally, this course will focus on assistive technologies related to the academic instruction, communication (AAC) and behavior modification of students with autism. Course content will emphasize data driven instructional practice, manual and technology-based data acquisition practices, data presentation and using data to drive instructional practice.

## SPED 8622 - Readings In SPED

**Credit Hours:** (1-3) Former: (ISDS 7120) **Description** Individually directed readings culminating in synthesis of ideas. May be repeated with change of topic for 9 hours.

## SPED 8623 - Supervised Research SPED

**Credit Hours:** (1-6) Former: (ISDS 7170) **Description** Collaborative research with faculty, including planning, design, management, analysis, and reporting of research. May be repeated for a maximum of 12 credit hours.

## SPED 8900 - Advanced Practicum/Capstone

**Credit Hours:** (3) Former: (ISDS 7201) **Description** Designed as a culminating experience exposing students to the application of behavior analytic strategies and tactics in a variety of settings. Direct participation is required for the successful completion of a field-study, on-site project or other classroom based experience. This course must be taken during the last semester of coursework.

## Sport and Leisure Commerce

### SLC 6001 - Sprt Sales/Rev Prod I \*\*

**Credit Hours:** (3) **Description** Analyzes and produces skills essential to revenue production and sales processes commonly found in the sport business. **PREREQUISITE(S):** PREREQUISITE: Permission of instructor.

### SLC 6002 - Sprt Sales/Rev Prod II

**Credit Hours:** (3) **Description** Focuses on producing skills essential to managing existing customer sales commonly

found in sport business. **PREREQUISITE(S):** PREREQUISITE: SLC 6001.

## SLC 6102-6111 - Workshops in SLC

**Credit Hours:** (1-6) **Description** Selected phases of sport and leisure commerce through group study, in-depth study in area of interest and need for leaders in sport and leisure commerce. May be repeated for credit when topic varies.

## SLC 6410 - College Athletics Compliance

**Credit Hours:** 3 **Description** Explore how college athletic departments comply with rules and regulations of the NCAA in the conduct of its intercollegiate athletics programs. Includes rules education, knowledge of violations and infractions, and investigation. Standard Letter

## SLC 6622 - Fan Behavior/Rivalry \*\*

**Credit Hours:** (3) **Description** Overview of factors that influence sport fan behavior including why people become fans of sport teams, influence of rivalry on fan behavior, and expected outcomes of fan behavior and rivalry.

## SLC 6800 - Adv Computer Apps in SPRT \*\*

**Credit Hours:** (3) Former: (HMEC, CSED 6602) **Description** Evolution, current application, and future potential of computers for sport commerce. **PREREQUISITE(S):** Permission of instructor.

## SLC 6902-6911 - Special Topics SLC

**Credit Hours:** (1-3) **Description** Current topics in sport and leisure commerce. May be repeated with change in topic.

## Sport and Leisure Studies

### SLS 6141 - Seminar/Chronology of Sport

**Credit Hours:** (3) **Description** Historical development of sport from either a general or sport-specific perspective including the growth of competition, the rise of sport(s), management of sport, changing function of sport, chronicles of sport as business and history of the relationship between sport and other institutions. May be repeated for a maximum of 9 hours credit when change of topic. May be repeated for a maximum of 9 hours credit when change of topic.

## Sport Commerce

### SPRT 7010 - Research&Data Analysis in SHM \*\*

**Credit Hours:** (3) **Description** Overview of systematic, structured problem solving for decision making in sport and hospitality management services. Overview of research concepts, ethical issues, and process. Includes introduction to qualitative and quantitative research designs, data collection, analysis, and dissemination of findings.

### SPRT 7031 - Sport Finance \*\*

**Credit Hours:** (3) **Description** Provides an understanding of the current financial status of the various sectors of the sport industry as well as the strategies frequently implemented by financial managers within the industry.

### SPRT 7041 - Interscholastic Athletic Admin

**Credit Hours:** 3 **Description** This course will delve into the administration of secondary educational athletics. This will include a complete study of philosophy, personnel policies, financial policies, general athletic policies, and student athlete guidelines. **PREREQUISITE(S):** None

### SPRT 7102-7111 - Special Topics SPRT

**Credit Hours:** (1-6) **Description** Selected phases of sport commerce through group study, in-depth study in area of interest and need for leaders in sport and leisure commerce. May be repeated for credit when topic varies.

### SPRT 7141 - Experiential Learning Credit

**Credit Hours:** (1-9) **Description** A systematic process for evaluating and credentialing graduate-level learning gained in a variety of contexts. Students will provide documentation of graduate-level knowledge and skills garnered in nontraditional settings to expert faculty reviewers.

### SPRT 7142 - Seminar in SPRT \*\*

**Credit Hours:** (1-3) **Description** May be repeated for a maximum of 3 credits. Grades of S, U, or IP will be given.

### SPRT 7152 - Spec Problems in SPRT \*\*

**Credit Hours:** (1-3) **Description** Independent study or research, or both, on selected sport commerce problems and issues. **PREREQUISITE(S):** PREREQUISITE: Permission of instructor. Grades of A-F, or IP will be given.

### SPRT 7165 - Adv Pers SC Global City

**Credit Hours:** (3) **Description** Provides and understanding of synergies and disjunctures between the US and the UK sport and leisure marketplace; addresses cultural negotiations and promotional strategizing of corporations that attempt to secure a presence within multiple locales and the work of cultural intermediaries. **PREREQUISITE(S):** PREREQUISITE: SPRT 7321 or permission of instructor.

### SPRT 7175 - Adv Mgmt Sprt Org Int Per

**Credit Hours:** (3) **Description** Provides a critical understanding of how management of sport and leisure organizations is carried out in a European context; students will gain critical knowledge of the global environment in which the US sport industry exists and the specific urban issues that frame the UK marketplace. **PREREQUISITE(S):** PREREQUISITE: Permission of instructor.

### SPRT 7321 - Theoretical Foundations \*\*

**Credit Hours:** (3) **Description** Influence of historical, philosophical, and social elements upon sport and leisure management policies, practices, and programs.

### SPRT 7331 - SPRT Promotional Culture

**Credit Hours:** (3) **Description** Examination of popular sport practices and representations as both the products and producers of particular social, historical, economic, technological, and political arrangements; contribution to the formation of contextually specific class, race, gender, and nation based identities and experiences.

### SPRT 7341 - Commrci Rec/Travl Toursm

**Credit Hours:** (3) **Description** Survey of commercial leisure services with special emphasis placed on travel and tourism; sports and athletics, theaters, fitness centers, amusement and theme parks, aquatic areas, risk recreation, and historical areas, and the travel and tourism industry.

### SPRT 7351 - Gender/Sexuality in SPRT

**Credit Hours:** 3 **Description** Relationship between sport, leisure, and the dominant gender practices, experiences, and identities that structure everyday life within contemporary society. Standard Letter

### **SPRT 7361 - Race & Ethnicity in SPRT**

**Credit Hours:** (3) **Description** Influence of sport and leisure on construction of differentiated racial and ethnic identities and experiences in contemporary American society, focusing on the way sport and leisure provide contexts in which dominant understandings of race and ethnicity are introduced, naturalized, and reproduced. Standard Letter

### **SPRT 7371 - Sprt Comrce in Global Mrkt**

**Credit Hours:** (3) **Description** Cultural production, meaning, promotion, and consumption of sport and leisure across contrasting social, political, and economic systems; relative position of sport and leisure industries at cultural interstices in the emerging global village including the phenomena of cultural conflict, cultural resistance, and cultural imperialism. **PREREQUISITE(S):** PREREQUISITE: SPRT 7321; and 7331 or permission of instructor.

### **SPRT 7410 - Athletic Team Management**

**Credit Hours:** (3) **Description** Managerial perspective for developing an athletic program. Includes ethics within coaching, developing a philosophy of coaching, developing a youth feeder program within an athletic program, building and supervising a staff, and working with various stakeholders including administrators, athletes, and boosters.

### **SPRT 7420 - Sport Marketing \*\***

**Credit Hours:** (3) **Description** Basic market concepts with applications to sport and leisure organizations, including urban sport and leisure market consumer behavior, strategic market planning, marketing mix component integration, and market information management **PREREQUISITE(S):** PREREQUISITE: MKTG 3010 and 4901 (or equivalents); or MKTG 7060; or permission of instructor.

### **SPRT 7440 - Promotions in Sport Commerce \*\***

**Credit Hours:** (3) **Description** A study of marketing communication principles and practices as they relate to sport and leisure from a theoretical, as well as practical perspective; special emphasis on building and maintaining effective media

relations, advertising, sponsorship, licensing, public relations, sales, and after-marketing tactics.

### **SPRT 7503 - Strat Mgmt Sprt Cmrce Org \*\***

**Credit Hours:** (3) **Description** Analysis of theoretical and practical issues relevant to management and administration of sport and leisure organizations; application of organizational analysis, managing change and external environments; understanding and managing power and organizational culture of sport commerce.

### **SPRT 7600 - Readings in SPRT \*\***

**Credit Hours:** (3) **Description** Directed readings in the area of sport and leisure; materials related to strengthen areas of study. May be repeated for a maximum of 9 credits. Grades of A-F, or IP will be given.

### **SPRT 7603 - Admin of Athletics \*\***

**Credit Hours:** (3) **Description** Examination of sport within American higher education and related institutions. Designed to prepare students for a career in intercollegiate athletics management. Examination of athletic departments as well as the governing associations and related institutions that impact each other. Reviewing case studies from institutions of various institutional size, conferences, associations, and divisions, this course further provides students a comprehensive view of athletic administration procedures.

### **SPRT 7605 - Practicum in SPRT \*\***

**Credit Hours:** (3) **Description** Culminating experience allows students to demonstrate knowledge and skills in an appropriate professional setting based on their training and skills. Should be conducted after all other course work is complete. Grades of S, U, or IP will be given.

### **SPRT 7650 - Legal Issues in Sport Commerce \*\***

**Credit Hours:** (3) **Description** Overview of the legal system's role in the provision of sport products and services including legal system, constitutional law, negligence law, risk management, intentional torts, criminal acts, antitrust law, labor law, contract law, intellectual property law, and gender discrimination legislation/statutes within the sport industry.

### **SPRT 7651 - Policy and Governance in Sport \*\***

**Credit Hours:** (3) **Description** Examination and analysis of development and enforcement of sport policies including those by local, national, and international sport organizations. Using the social institution of sport, topics examined include economic and social development, environmental responsibility, sport diplomacy, violence, criminal behavior, performance enhancing drugs, gambling, and development of sport.

### **SPRT 7653 - Sport Areas & Facilities Mgmt**

**Credit Hours:** (3) **Description** Advanced management and operation of leisure and sport areas and facilities, emphasizing comprehensive planning, design, maintenance, and inspection of areas and facilities.

### **SPRT 7741 - Occupational Devp SPRT \*\***

**Credit Hours:** (3-6) **Description** Independent study on sport topics related to student's occupational experiences and goals. May be repeated. Grades of S, U, or I will be given. NOTE: Sport Commerce majors may not use this course to fulfill degree requirements. **PREREQUISITE(S):** PREREQUISITE: Permission of Advisor.

### **SPRT 7800 - Adv Computer Apps in SPRT**

**Credit Hours:** (3) **Description** Evolution, current application, and future potential of computers for sport commerce.

### **SPRT 7950 - Applied Project in SPRT \*\***

**Credit Hours:** (1-6) **Description** Scholarly capstone experience in which students integrate and apply discipline-specific knowledge, skills, and insights in developing a product related to their professional goals as approved by a three-person project committee. **PREREQUISITE(S):** PREREQUISITE: Completion of 18 credit hours in the program of study with a minimum graduate GPA of 3.00 and permission of instructor. Grades of S, U, or IP will be given.

## **Supply Chain Management Sciences**

### **SCMS 6510 - Operations Planning & Control**

**Credit Hours:** (3) **Description** Focus on planning and management of material flows in internal and external supply chains for effectively delivering value to the customer. NOTE: Continuation of SCMS 3510

### **SCMS 6620 - Logistics Management**

**Credit Hours:** (3) **Description** Analysis of logistics activities, distribution network alternatives, and customer service aspects; examination of freight traffic function within firm's logistics system, analysis of rate and classification systems, and carrier selection; evaluation of logistics procedures and strategies and their appropriateness to different industries

### **SCMS 6650 - Supply Management**

**Credit Hours:** (3) **Description** Role of purchasing function within organization; purchasing process; procurement and commodity strategy; insourcing/outourcing; supplies evaluation and selection; supplier management and development; global sourcing; cost and price analysis; negotiation; contract management; new product development.

### **SCMS 7110 - Intro to Business Analytics \*\***

**Credit Hours:** (3) **Description** (ISDS 7110) Statistical concepts and tools, optimization and simulation techniques useful in understanding, assessing, and controlling operations of business and society.

### **SCMS 7120 - Mgmt Science/Decsn Tech**

**Credit Hours:** (3) **Description** (ISDS 7120) Insights into model-assisted decision making and Management Science/Operations Research: value focused thinking in problem framing, modeling, analysis, and communication; analyses of complexities related to enterprise-wide decision technologies; building and analyzing sequential decisions, simultaneous decisions, and dynamic systems; emphasis on supply chain modeling, visualization, and analysis. NOTE: Open only to degree-seeking students.

### **SCMS 7170 - Intl Prodctn Oper Mgmt**

**Credit Hours:** (3) **Description** (ISDS 7170) Tools and techniques to capture the opportunities of world markets for enhancing competitiveness of a business through higher productivity and quality in a time-based mode of operations; effective resource utilization and reliable supply-chain strategies emphasized. Focus on creating and managing global suppliers and global customers.



### SCMS 7201 - Pharm Supply Chain Mgmt

**Credit Hours:** (3) **Description** (ISDS 7201) Concepts and tools for assessment, design, and management of modern pharmaceutical supply chains; includes strategic supply chain performance, metrics, and drivers, network design and assessment, strategic sourcing, supply and demand forecasting, aggregate planning, inventory resource planning, transportation network design and management, pricing and revenue management, customer relationship management, supply chain management, and enabling role of information technology across the supply chain.

### SCMS 7233 - Supply Chain Analytics

**Credit Hours:** 3 **Description** Applying a strategic framework to analyze supply chains, this course introduces and showcases applications of business analytics to the key strategic, tactical, and operational decision opportunities presented in the supply chain management. Utilizing integrated descriptive, predictive, and prescriptive analytics methods, the course focuses on managerial decision analyses related to supply chain network design, supply-demand forecasting and planning, sales and operations planning, inventories planning and management, transportation design and planning, sourcing, pricing and revenue management, and supply chain risk management, in various industries. Case studies, real-world exercises, and projects drive the learning environment and promote extensive use of MS Excel 2010 environment and Analytics Solver Platform for Education (ASPE) software system. **PREREQUISITE(S):** SCMS 7110

### SCMS 7234-7238 - Special Topics in Supply Chain Management

**Credit Hours:** 1-3 **Description** Varied topics. May be repeated with change in topic.

### SCMS 7310 - Sem Prod Operatns Mgt

**Credit Hours:** (3) **Description** (ISDS 7/8310) Problems and issues encountered in productions and operations management environment; master planning, capacity management, resources planning, and shop floor management; managerial decision-making process for improving productivity and better utilization of scarce resources; implementation problems and solutions; manufacturing and service operations.

### SCMS 7311 - Seminar in SCM

**Credit Hours:** (3) **Description** (ISDS 7/8311) In-depth approach to integrated supply chain management (SCM) as a key element of the competitive strategy for supply chain member organizations; topics include key management, logistics, information systems and technologies, organizational relationships and global issues.

### SCMS 7312 - Sem Val Chain Res Mgmt

**Credit Hours:** (3) **Description** (ISDS 7/8312) Multifunctional analysis of problems and issues associated with planning critical resources in the value chain of a business; emphasizes acquiring, consuming, and disposing of key resources in an ethical and socially responsible manner to provide a business with sustainable strategic competitive advantage while delivering maximum value to the customer.

### SCMS 7313 - Supply Chain Operations Mgmt \*\*

**Credit Hours:** (3) **Description** (ISDS 7/8313) Acquisition, transformation, and distribution of goods and services within the global supply chain; covers concepts, tools, and strategies to design and manage operations, such as strategic implications, performance measurement, process management, sourcing, operations design, quality, inventory, logistics, enabling information systems and technology, and global issues among other topics.

### SCMS 7315 - Dsgn/Mgmt Sup Chns Biom Ind

**Credit Hours:** (3) **Description** (ISDS 7315) Concepts and tools for designing and managing modern supply chains in the biomedical industry; includes purchasing and sourcing, demand forecasting, inventory resource planning, domestic and international transportation, customer relationship management, facility location, service-response logistics, and performance measurement.

### SCMS 7425 - Determ Model Mgmt Sci

**Credit Hours:** (3) **Description** (ISDS 7/8425) Deterministic models concerned with optimal allocation of limited resources among competing activities; business applications of linear programming including duality and post-optimality analysis as well as branch-and-bound and network flow methods of integer linear programming.

### SCMS 7430 - Adv Quan Tpcs Bus Dec

**Credit Hours:** (3) **Description** (ISDS 7/8430) Advanced study of management decision-making using various quantitative methods of analysis; specialized applications of specific foundation courses in management science.

### **SCMS 7431 - Applied Modeling**

**Credit Hours:** (3) **Description** (ISDS 7/8431) The application of management science modeling across business disciplines through readings, case studies, and projects; computer modeling languages utilized.

### **SCMS 7450 - Intg SCM And Tech**

**Credit Hours:** (3) **Description** (ISDS 7/8450) Modeling techniques in designing and operating effective supply chains; current modeling applications, integration of informational and physical supply chains, operational planning and inventory management; organizational adaptation to modeling systems and applications.

### **SCMS 7921 - Sem SCMS Research**

**Credit Hours:** (3) **Description** (ISDS 7/8921) Some statistical techniques available to business researcher; topics may include: contingency tables, bivariate correlation analysis, regression analysis, ANOVA, discriminant analysis, and factor analysis; use of computerized statistical packages and interpretation of results of packages.

### **SCMS 8310 - Sem Prod Operatns Mgt**

**Credit Hours:** (3) **Description** (ISDS 7/8310) Problems and issues encountered in productions and operations management environment; master planning, capacity management, resources planning, and shop floor management; managerial decision-making process for improving productivity and better utilization of scarce resources; implementation problems and solutions; manufacturing and service operations.

### **SCMS 8311 - Seminar in SCM**

**Credit Hours:** (3) **Description** (ISDS 7/8311) In-depth approach to integrated supply chain management (SCM) as a key element of the competitive strategy for supply chain member organizations; topics include key management, logistics, information systems and technologies, organizational relationships and global issues.

### **SCMS 8312 - Sem Val Chain Res Mgmt**

**Credit Hours:** (3) **Description** (ISDS 7/8312)

Multifunctional analysis of problems and issues associated with planning critical resources in the value chain of a business; emphasizes acquiring, consuming, and disposing of key resources in an ethical and socially responsible manner to provide a business with sustainable strategic competitive advantage while delivering maximum value to the customer.

### **SCMS 8313 - Supply Chain Operations Mgmt**

**Credit Hours:** (3) **Description** (ISDS 7/8313) Acquisition, transformation, and distribution of goods and services within the global supply chain; covers concepts, tools, and strategies to design and manage operations, such as strategic implications, performance measurement, process management, sourcing, operations design, quality, inventory, logistics, enabling information systems and technology, and global issues among other topics.

### **SCMS 8425 - Determ Model Mgmt Sci**

**Credit Hours:** (3) **Description** (ISDS 7/8425) Deterministic models concerned with optimal allocation of limited resources among competing activities; business applications of linear programming including duality and post-optimality analysis as well as branch-and-bound and network flow methods of integer linear programming.

### **SCMS 8430 - Adv Quan Tpcs Bus Dec**

**Credit Hours:** (3) **Description** (ISDS 7/8430) Advanced study of management decision-making using various quantitative methods of analysis; specialized applications of specific foundation courses in management science.

### **SCMS 8431 - Applied Modeling**

**Credit Hours:** (3) **Description** (ISDS 7/8431) The application of management science modeling across business disciplines through readings, case studies, and projects; computer modeling languages utilized.

### **SCMS 8450 - Intg SCM And Tech**

**Credit Hours:** (3) **Description** (ISDS 7/8450) Modeling techniques in designing and operating effective supply chains; current modeling applications, integration of informational and physical supply chains, operational planning and inventory management; organizational adaptation to modeling systems and applications.

**SCMS 8530 - Stat Tech Business Rsch**

**Credit Hours:** (3) **Description** (ISDS 8530) Introduction to statistical methods pertinent to business research; hypotheses testing procedures, association analyses, regression and forecasting techniques, and nonparametric methods; intensive research orientation and use of statistical software; critical review of current usage of various research and data analysis techniques.

**SCMS 8540 - Multv Analys/Bus Rsch**

**Credit Hours:** (3) **Description** (ISDS 8540) Multivariate techniques available to the business researcher; use of computerized statistical packages and their interpretation.

**SCMS 8921 - Sem SCMS Research**

**Credit Hours:** (3) **Description** (ISDS 7/8921) Some statistical techniques available to business researcher; topics may include: contingency tables, bivariate correlation analysis, regression analysis, ANOVA, discriminant analysis, and factor analysis; use of computerized statistical packages and interpretation of results of packages.

**Teacher Education ESL****TEAE 6020 - Read Write Learn Methods ESL**

**Credit Hours:** (3)

**TEAE 6260 - Teach ESL w/Internet Tech**

**Credit Hours:** (3)

**TEAE 6300 - Multicultural Education**

**Credit Hours:** (3)

**TEAE 6437 - Assessment for ESL**

**Credit Hours:** (3)

**TEAE 6500 - Linguistics**

**Credit Hours:** (3)

**TEAE 6501 - Modern English Grammar**

**Credit Hours:** (3)

**TEAE 6550 - Latin Amer/Country/Peop**

**Credit Hours:** (3)

**Teacher Education Licensure****TELC 7001 - Adolescent Development \*\***

**Credit Hours:** (3)

**TELC 7002 - Assessment/Evaluation \*\***

**Credit Hours:** (3)

**TELC 7003 - Managing Learning Environment \*\***

**Credit Hours:** (3)

**TELC 7004 - Survey Exceptnl Chldrn \*\***

**Credit Hours:** (3)

**TELC 7005 - Teaching and Learning w/Tech \*\***

**Credit Hours:** (3)

**TELC 7006 - Teacher/Agent Of Change \*\***

**Credit Hours:** (3)

**Teacher Education Special****TEAS 6001 - Col Prac/Trnd/Issue/Char Sp Ed**

**Credit Hours:** (4)

**TEAS 6003 - Assess Procedure in Special Ed**

**Credit Hours:** (3)

**TEAS 6004 - Appl Behavior Interven/Supp**

**Credit Hours:** (4)

### **TEAS 6005 - Read Methods Across Curriculum**

**Credit Hours:** (3)

### **TEAS 6006 - Assistive Technology**

**Credit Hours:** (3)

### **TEAS 6007 - Math Method Across Curr**

**Credit Hours:** (3)

### **TEAS 6008 - Teach Mild/Moderate**

**Credit Hours:** (4)

### **TEAS 6009 - Adaptive PE in Special Educ**

**Credit Hours:** (2)

### **TEAS 6010 - Methods Instruct/Teach Compre**

**Credit Hours:** (4)

### **TEAS 6011 - Assess Infant/Toddlers**

**Credit Hours:** (2)

### **TEAS 6012 - Instruction: Early Child/Sp Ed**

**Credit Hours:** (4)

## **Theatre**

### **THEA 6210-6219 - Special Topics in Theatre**

**Credit Hours:** (1-3)

### **THEA 6220 - Acting Through Song I**

**Credit Hours:** (3) **Description** Exploration of techniques that allow the performer to fuse the act of acting and singing. Two

lecture hours, two laboratory hours per week. Offered alternate years.

### **THEA 6221 - Stage Dialects**

**Credit Hours:** (3) **Description** Transcription for International Phonetic Alphabet (IPA). Voice and dialect technique for conveying dramatic intention and character.

### **THEA 6222 - Asian Theatre**

**Credit Hours:** (3) **Description** History and theory of traditional and contemporary theatre forms of Asia, including study in cultural and social history. Offered alternate years.

### **THEA 6223 - Acting Through Song II**

**Credit Hours:** (3) **Description** Further exploration of techniques that allow the performer to fuse the art of acting and singing. NOTE: Offered alternate years.

**PREREQUISITE(S):** THEA 6220 or permission of instructor.

### **THEA 6224 - Principle/Music Theory/Theatre**

**Credit Hours:** (3) **Description** Study of basic written music theory and aural skills to aid the comprehensive theatre professional.

### **THEA 6455 - Directing Narrative Theatre**

**Credit Hours:** (3) **Description** Directing techniques for staging literary texts not originally written for the theatre. Includes script adaptation of short stories, poetry, and non-fiction prose. Directing projects required. (Offered alternate years)

### **THEA 6457 - Vocal Style/Performance**

**Credit Hours:** (3) **Description** Exploration of language based characterization as it evolves from structure and style of text.

### **THEA 6501 - Adv Movement Styles**

**Credit Hours:** (3) **Description** Study in advanced physical theatre styles. Varied semester topics: solo performance, performance art; fighting styles for period weapons, physical theatre techniques for theatre teachers, choreographers and

directors. May be repeated for a maximum of 6 hours credit when content varies. (Offered alternate years).

### **THEA 6503 - Theatre Teaching Methods**

**Credit Hours:** (3) Former: 6503 **Description** Analysis of principles, methods, philosophy, materials, practice of teaching theatre in educational settings. \$20 per credit hour  
**PREREQUISITE(S):** Permission of Instructor. Standard Letter

### **THEA 6511 - Automation & Mechanization**

**Credit Hours:** (2) **Description** Training in the typical applications of pneumatic, hydraulic, and motorized systems as well as electronic and automated controls of these systems. NOTE: Offered alternate years.

### **THEA 6512 - Digital Rendering**

**Credit Hours:** (2) **Description** Training in digital media programs to generate theatrical renderings for Scenic, Costume and Lighting design. Software technology includes Introductory Photoshop, Corel Paint, and Illustrator tools, techniques, and organizational methodologies. NOTE: Offered alternate years.

### **THEA 6513 - Digital Fabrication**

**Credit Hours:** (2) **Description** Training in digital fabrication equipment such as a laser cutter, 3D printer and CNC router to improve the student's knowledge and skill level. Outcomes include proficiency in 3D drafting, 3D scale model creation and layout techniques. NOTE: Offered alternate years.

### **THEA 6516 - Technical Direction**

**Credit Hours:** (2) **Description** Lecture/laboratory for theatre technicians to include production organization and safety, engineering, rigging, materials control, and supply ordering. NOTE: Offered alternate years.

### **THEA 6517 - Scenic Painting II**

**Credit Hours:** (2) **Description** Examination of advanced scenic art techniques including additive and subtractive sculpting in the creation of dimensional objects such as cartouches, relief carvings, sculptures, and other dimensional scenic elements. **PREREQUISITE(S):** THEA 3561.

### **THEA 6531 - Acting Styles**

**Credit Hours:** (3) **Description** Development of acting styles as influenced by environments of historical periods. May be repeated for maximum of 6 hours credit with change of course content.

### **THEA 6532 - Mask Performance**

**Credit Hours:** (3) **Description** Varied semester topics: Commedia dell'arte performance; creation and performance of the character mask; mask work based in physical theatre. May be repeated for a maximum of 6 hours credit when content varies.

### **THEA 6539 - Contemporary Theatre History**

**Credit Hours:** (3) **Description** An examination of the movement and trends in theatre during the 20th and 21st centuries.

### **THEA 6544 - Gay and Lesbian Dramatic Literature**

**Credit Hours:** (3) **Description** An overview of the theatre and dramatic literature reflecting the gay and lesbian experience in America during the 20th and 21st centuries. NOTE: Offered alternate years.

### **THEA 6548 - Musical Theatre History**

**Credit Hours:** (3) **Description** Survey of the shaping forces, history, art and craft of American musical. (Offered alternate years)

### **THEA 6549 - Theatre History**

**Credit Hours:** (3) **Description** Shaping forces and theatrical forms from early civilization to the present time, with an emphasis on Western culture. Offered alternate years.

### **THEA 6555 - Scenic Technology**

**Credit Hours:** (2) **Description** Lecture/laboratory using traditional and contemporary materials and scenic technologies including rigging, metals and welding, wood working, and plastics. NOTE: Offered alternate years. May be repeated for maximum of 4 credit hours with permission of instructor. **PREREQUISITE(S):** Permission of instructor.

## THEA 6556 - Lighting and Sound Technology

**Credit Hours:** (2) **Description** The examination theatre technology, with an emphasis on technical projects as associated with the responsibilities of a production electrician and sound engineer. Topics include instrumentation and equipment, electricity and electronic, control and mixing systems, operational and maintenance principles and procedures for stage electricians and audio engineers. NOTE: Offered alternate years.

## THEA 6557 - Costume Technology I

**Credit Hours:** (2) Former: 6557 **Description** Topics in costume construction techniques employing both traditional and experimental methods. Emphasis on professional entertainment portfolio development. Topics include: pattern and fit for the designer, dyeing, painting, and fabric modification costume crafts. \$20 per credit hour May be repeated for a maximum of 6 hours credit. **PREREQUISITE(S):** Permission of instructor.

## THEA 6559 - Thea/African Diaspora

**Credit Hours:** (3) **Description** Exploration of selected playwrights and theatre practitioners of West and South African, Caribbean, and African American descent. Includes performance projects. May be repeated for a maximum of 6 credit hours when content varies. Offered alternate years.

## THEA 6571 - Playwriting

**Credit Hours:** (3) **Description** Theory and principles of writing plays for the stage; practice in writing either the short or long play. May be repeated for a maximum of 9 hours. Offered alternate years.

## THEA 6573 - Costume Technology II

**Credit Hours:** (2) **Description** Advanced studio in costume construction techniques employing both traditional and experimental methods. Topics could include: Advanced pattern making and draping, corsetry, tailoring, theatrical hair & advanced makeup technique, and millinery/crafts. May be repeated for a maximum of 6 credit hours. (Offered alternate years) **PREREQUISITE(S):** Permission of instructor.

## THEA 6579 - Advanced Scenic Production

**Credit Hours:** (3) Former: 6209 **Description** Processes and techniques employed by theatre technicians and designers in the design, planning, and construction of scenery, structures and effects; survey of theatrical scenery types and traditional methodologies for problem solving. \$20 per credit hour May be repeated for a maximum of 6 hours credit.

**PREREQUISITE(S):** Permission of instructor.

## THEA 6592 - Thtr Arch/Facility Plan

**Credit Hours:** (3) **Description** Processes and techniques employed by theatre planners in design and construction/renovation of theatrical spaces and structures; includes survey of theatre forms, historical development of theatrical structures and spaces, programming methods and procedures, specification, renovation techniques, multi-use structure concepts, and consultation procedures and practices. Offered alternate years.

## THEA 6631 - Acting For Film And TV

**Credit Hours:** (3) **Description** Educational experience for the actor in the media of film and television. Offered alternate years.

## THEA 7210-7219 - Special Topics in Theatre

**Credit Hours:** (1-3)

## THEA 7312 - Rigging Studio

**Credit Hours:** (1) **Description** Designed to build upon the student's existing basic rigging skills and knowledge of equipment with primary focus on safety for the various production areas of theatre. NOTE: Offered alternate years.

## THEA 7313 - Design Pedagogy

**Credit Hours:** (1) Former: 7313 **Description** Discussion of season and classroom design work throughout the course of the semester, based on class and departmental deadlines (production calendar). Faculty and students will discuss and evaluate the design process including concept development, research, documentation, and execution. Offered Alternate years. NOTE: Offered alternate years. \$20 per credit hour Standard Letter

## THEA 7314 - Collaborative Models for Theatre Professionals

**Credit Hours:** (1) **Description** An examination of how to navigate the various theatre models (LORT, Not-for-profit, etc...) and work with the key collaborative players (producers, artistic directors, various designers) and bridge the gap between graduate student and theatre professional. NOTE: Offered alternate years.

### THEA 7315 - Prof Tech Manage Prac

**Credit Hours:** (1) **Description** The investigation and application of management skills for prospective supervisory positions in production work in theatre. Topics include hiring practices; planning, organizing and scheduling of production seasons; resource management; and supervision and effective use of crews. NOTE: Offered alternate years.

### THEA 7316 - CAD for Theatre

**Credit Hours:** (1) **Description** Advanced application of CAD to production areas in theatre. Emphasis on industry standards and expectations through realized projects and working documents. NOTE: Offered alternate years.

### THEA 7317 - Production Seminar

**Credit Hours:** (1) **Description** Seminar discussion on the active design research on the technical aspects of design (e.g. Set, Lights, Costume, or Sound) work. Season and classroom work will be presented based on production and class deadlines. Topics dependent on concentrated area of discussion. NOTE: Offered alternate years.

### THEA 7440 - Sem Critial Studies

**Credit Hours:** (3) **Description** Advanced studies in theatre criticism, dramatic literature, and theatre history; methods of scholarly research appropriate for the dramaturg and producing artist; semester topics alternate among studies of selected authors, periods, genres, and theatre movements. Repeatable for a maximum of 9 hours when topic varies. Offered alternate years.

### THEA 7520 - Directing Lab

**Credit Hours:** 1 *Cross listing N/A* **Description** *Directing Labs* are intended to give directing students the opportunity to focus on staging and working with actors, to experiment, and to develop new work. Standard Letter

### THEA 7521 - Stage Direction

**Credit Hours:** (3) **Description** Processes of stage direction from script interpretation to rehearsal and performance with emphasis on the collaborative interplay between stage director and designer; traditional and non-traditional theatrical modes; directing projects required.

### THEA 7522 - Writing About Theatre

**Credit Hours:** 1 *Cross listing N/A* **Description** A course on how to write blogs, interviews, essays, production critiques, research papers, CVs, teaching philosophies, and artist statements. Standard Letter

### THEA 7526 - Directing Studio

**Credit Hours:** (3) **Description** Seminar/practicum investigation of advanced techniques of the stage director; styles of production, creative interpretation of established dramatic literature and/or creation of original work for the stage. Directing project required. Repeatable for a maximum of 9 hours.

### THEA 7546 - Visual History I

**Credit Hours:** (3) **Description** Visual history up to the pre-Victorian era. The first half of the semester will examine the subject through a scenic design lens: external (architectural) and internal (interior design) from the Paleolithic to Romanticism, while the second half will focus on costume design. The information will provide a common knowledge base to aid in the theatrical collaboration between a director/designer or design team members. NOTE: Offered alternate years.

### THEA 7547 - Visual History II

**Credit Hours:** (3) **Description** Visual history from the Victorian era to Modern day. The first half of the semester will examine the subject through a scenic design lens: external (architectural) and internal (interior design), while the second half will focus on costume design. The information will provide a common knowledge base to aid in the theatrical collaboration between a director/designer or design team members. NOTE: Offered alternate years.

### THEA 7553 - Styles Of Directing

**Credit Hours:** (3) **Description** Exploration of directing styles as influenced by environments of historical periods or genres. Topics may change. Directing projects required. NOTE:

Offered alternate years. Repeatable for a maximum of 6-hours with permission of instructor.

### **THEA 7554 - Seminar In Directing**

**Credit Hours:** (3) **Description** Conceptual and practical studies in stage direction with revolving emphases on The Method of Physical Actions, Epic Theatre, Directing Shakespeare, and the Viewpoints and Composition. Directing projects required. Offered every fall. Repeatable up to 9 hours

### **THEA 7560 - Studies Dsgn/Tech Prod**

**Credit Hours:** (3) **Description** Individually supervised design and technical production projects in areas of scenery, costumes, lighting, and sound. Repeatable for a maximum of 9 hours.

### **THEA 7561 - Scenic Design I**

**Credit Hours:** (2) **Description** The use of theatrical rendering as the primary communication tool between a director and designer. Topics include examination of performance spaces, rendering techniques and presentation practices. NOTE: Offered alternate years. **PREREQUISITE(S):** Permission of instructor.

### **THEA 7562 - Lighting Design I**

**Credit Hours:** (2) **Description** Investigation of the art of theatrical lighting design; script analysis, creative design processes and aesthetics, cue techniques, design styles and forms, procedures and practices for working designers and criticism of lighting design. Research work and staged scenes required. NOTE: Offered alternate years.

### **THEA 7563 - Costume Design I**

**Credit Hours:** (2) **Description** Exploration/application of aesthetic principles and practical production concerns of costume design; special consideration to interpretation of dramatic text through design and fabrication, employing a variety of rendering processes in the studio environment. Emphasis on professional practice for the entertainment industry, and portfolio development. NOTE: Offered alternate years. **PREREQUISITE(S):** Permission of instructor.

### **THEA 7564 - Thea Collab & Style**

**Credit Hours:** (3) **Description** Exploration of elements of style as they pertain to concept development for theatrical

production; engagement in dynamics of the collaborative process.

### **THEA 7565 - Costume Design II**

**Credit Hours:** (2) **Description** An advanced course in costume design study with emphases on design process and executive expectations/solutions. Topics to include: Composition, Styling, Fit, Period Style, Fabrications and Creative Invention. NOTE: Offered alternate years. May be repeated up to 4 credits with permission of instructor.

### **THEA 7566 - Sound Design I**

**Credit Hours:** (2) **Description** Investigation of the art of theatrical sound design; script analysis, creative design processes and aesthetics, cue techniques, design styles and forms, procedures and practices for working designers and criticism of sound design. NOTE: Offered alternate years.

### **THEA 7567 - Scenic Design II**

**Credit Hours:** (2) **Description** Scenic design will be explored through in depth exercises, specifically theatrical model building, that are intended to develop, critical thinking, priority analysis, design skills, and presentation technique. NOTE: Offered alternate years. **PREREQUISITE(S):** Permission of instructor. **COREQUISITE(S):** THEA 7313.

### **THEA 7569 - Lighting Design II**

**Credit Hours:** (2) **Description** Advanced investigation of the art of lighting design; alternate design events, creative design processes, aesthetics and programming techniques. NOTE: Offered alternate years.

### **THEA 7571 - Advanced Playwriting**

**Credit Hours:** (3) **Description** Continuation of theories and practice of playwriting with the objective of achieving a finished script, ready for production. May be repeated for maximum of 6 hours. Offered alternate years.

### **THEA 7574 - Projection Design and Control**

**Credit Hours:** (3) **Description** Exploration of a variety of topics and tools as they relate to the use of digital media, video and projections in the live production environment. NOTE: Offered alternate years.



## THEA 7576 - Sound Design II

**Credit Hours:** (2) **Description** Advanced investigation of the art of sound design; alternative creative design processes and aesthetics, advanced editing techniques. NOTE: Offered alternate years.

## THEA 7581 - Sem Drama Theory/Crit

**Credit Hours:** (3) Former: 7581 **Description** Further exploration of collaboration and style through major documents in dramatic theory from Aristotle to the present, with creative, practical application. Projects required. Offered alternate years. \$20 per credit hour.

## THEA 7582 - Analysis Dramatic Lit

**Credit Hours:** (3) **Description** The dramatic text as basis for unified and purposeful production concept; advanced techniques of director and scenographer used to solve artistic/practical problems of specific plays. Offered alternate years.

## THEA 7592 - Professional Theatre Practice

**Credit Hours:** (6) **Description** Procedures and practices for career success in several aspects of professional theatre: job searching, interviewing, self-promotion, theatrical production management, and grant writing.

## THEA 7600 - Internship

**Credit Hours:** (1-6) **Description** Supervised work completed in a professional setting. Repeatable for a maximum of 6 hours.

## THEA 7993 - Special Problems

**Credit Hours:** (1-3) **Description** THEA - Special Problems (1-3) Directed individual investigation of special research. May be repeated for a maximum of 9 credit hours.

## THEA 7995 - Production Practicum

**Credit Hours:** (3-6) **Description** Creative performance or production project suitable for public presentation and/or a practical application. Project to be determined in consultation with and directed by the student's supervisory committee. Grades of S, U, or I will be given.

## THEA 8210-8219 - Special Topics in Theatre

**Credit Hours:** (1-3)

## Urban Affairs and Public Policy

### SUAP 7100 - Public Policy Statistics\*\*

**Credit Hours:** (3) **Description** Introduction to processes of conducting statistical analyses of data relevant to public issues, problems, and policies in the areas of public administration, criminal justice, planning, and health administration; particular emphasis on providing an understanding of statistical concepts and techniques necessary for empirical analysis and decision-making.

**PREREQUISITE(S):** Admissions to a masters program in one of the SUAPP related schools (i.e., Public and Nonprofit Administration, Criminology and Criminal Justice, Social Work, City and Regional Planning, or Permission of Instructor.

### SUAP 8100 - Public Policy Statistics

**Credit Hours:** (3) **Description** Introduction to processes of conducting statistical analyses of data relevant to public issues, problems, and policies in the areas of public administration, criminal justice, planning, and health administration; particular emphasis on providing an understanding of statistical concepts and techniques necessary for empirical analysis and decision-making.

**PREREQUISITE(S):** Admissions to a masters program in one of the SUAPP related schools (i.e., Public and Nonprofit Administration, Criminology and Criminal Justice, Social Work, City and Regional Planning, or Permission of Instructor.

## UAPP 8010 - Exploration of Urban Research Theory

**Credit Hours:** (3) **Description** Team taught survey course provides critical examination of the theories and theoretical frameworks of the multiple social science disciplines central to the Urban Affairs PhD curriculum. Explores theories relevant to urbanism and urban environments, their structures, the processes of urbanization, urban power and economics, industrial and post-industrial cities, and other urban forces. Covers urban theories ranging from classical to contemporary theoretical perspectives. **PREREQUISITE(S):** Permission of instructor.

## UAPP 8011 - Scope/Methods in Urban Affairs Research

**Credit Hours:** (3) **Description** General and interdisciplinary approach to conducting research in social science, with an emphasis on applications in urban affairs. Considers conceptual questions and scientific research as a type of inquiry. Covers formulating research questions, designing studies, collecting and analyzing data. Students formulate original research projects. **PREREQUISITE(S):** Permission of instructor.

## UAPP 8012 - Collaborative Urban Problem Solving I

**Credit Hours:** (3) **Description** Collaborative Urban Problem Solving I is a required course for PhD in Urban Affairs. It is the first course in a two-course sequence that is generally completed in the student's second year of study. This course serves as the synthesis mechanism for the PhD program, which is 1) interdisciplinary, 2) geared at preparing researchers to address urban or metropolitan issues, and 3) designed to give students the opportunity to learn through engaging in local research that benefits the greater Memphis community. **PREREQUISITE(S):** Permission of instructor.

## UAPP 8013 - Collaborative Urban Problem Solving II

**Credit Hours:** (3) **Description** Second course in a two-course sequence that is generally completed in the student's second year of study. This course serves as the synthesis mechanism for the Urban Affairs and Public Policy PhD program, which is 1) interdisciplinary, 2) geared at preparing researchers to address urban or metropolitan issues, and 3) designed to give students the opportunity to learn through engaging in local research that benefits the greater Memphis community. Students will work collaboratively (internally and externally) to address a complex community challenge. **PREREQUISITE(S):** Permission of instructor.

## UAPP 8200 - Directed Readings

**Credit Hours:** 1-3 **Description** Individually directed readings which culminate in the synthesis of a student's ideas. May be repeated with change in topic for 9 credits. **PREREQUISITE(S):** Permission of instructor **PREREQUISITE(S)** or **COREQUISITE(S):** Must be enrolled in the PhD in Urban Affairs.

## UAPP 9000 - Dissertation

**Credit Hours:** 1-12 **Description** Academic credit for dissertation may be taken for a maximum of 12 hours and a minimum of 1 hour credit. Only 9 credits may be applied toward degree requirements for the PhD degree. Grades of S, U, or IP will be given. 12 **PREREQUISITE(S):** Doctoral students must complete all coursework in the Ph.D. in Urban Affairs and have passed Comprehensive Exams before enrolling in UAPP 9000.

## Women's and Gender Studies

### WMST 7320 - Women&Multi-Cultrl Exp

**Credit Hours:** (3) **Description** Interdisciplinary study of women's creativity and representation, including aspects of race, gender, and sexuality; focusing on theoretical approaches to and artistic practices in women's lives.

### WMST 7340 - Independent Study

**Credit Hours:** (3) **Description** Readings and written assignments designed to provide additional comprehension of ideas and skills related to a student's concentration.

### WMST 8380 - Public Presntn Research

**Credit Hours:** (3)

## University Libraries

### LBRY 6020 - Research and Information Literacy in Hospitality and Resort Management

**Credit Hours:** 3 **Description** This course will introduce the varieties of research, writing, and formal and informal communication that characterize and represent the profession. Students will research topics related to professional interests, write reports, make in-class presentations, and respond to the work of classmates. Students are expected to be actively engaged in the learning and participate fully in each session. The instructional goal is to apply these skills and methods to individual, professional interests and career goals. no **COREQUISITE(S):** None