2020~2021
Graduate Catalog

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2020~2021
GRADUATE CATALOG

M. David Rudd, Ph.D., ABPP
President

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 Catalog

For students whose initial enrollment occurs Fall 2020 - Summer 2021, this Catalog is valid through Summer 2029.

Individual program requirements described in the Graduate School Issue of the 2020-2021 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 Bulletin are subject to change at any time, and all courses, programs, and activities described in this Bulletin 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.

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

The University of Memphis is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award baccalaureate, masters, educational specialist, doctorate, 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.

About Graduate School

ROBIN POSTON, Ph.D.
Dean of the Graduate School
901.678.4212

The University of Memphis is a Doctoral Extensive Research/High Activity university. The Graduate School is 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 men and women 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, english, history, mathematical sciences, music, nursing, philosophy, psychology, and social and behavioral sciences. 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, and the College of Communication and Fine Arts, 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 fifty five Masters programs are offered through eight colleges and three schools. The degrees include Master of Arts, Master of Science, Master of Architecture, Master of Arts in Liberal Studies, Master of Arts in Teaching, Master of Business Administration, International 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 Professional Studies, Master of Public Administration, Master of Public Health, Master of Social Work, and Master of Science in Nursing.

Mission of the University

We provide the highest quality education by focusing on research and service benefiting local and global communities.

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 nations 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.

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.

Individual program requirements described in the University of Memphis Graduate Bulletin 2020-2021, are subject to change. Please contact the academic department or the Graduate School for changes. Domestic graduate admission applications will only be accepted through the Graduate Admissions application system. The Office of Admissions no longer accepts hard-copy (paper) applications. Please visit the Graduate School directory for more information on each program. Deadlines and requirements may differ for each program.

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.

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.

The University of Memphis requires all applicants born after January 1957 to have had the measles (MMR) vaccination after January 1, 1980, in order to be admitted. See "Miscellaneous Information" for additional information.

The applicant is advised to have all credentials on file well in advance (preferable six weeks) of the beginning of the term for which application is made.

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. Students who do not enroll for a Fall or Spring semester must apply for readmission.

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.

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.

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. For domestic students, signed and sealed transcripts that have been in the applicant's possession can be used for admission purposes; however, official transcripts may later be requested. Personal copies are not acceptable as official documents.
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. Test scores must be sent directly to Graduate Admissions from the testing agency. 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 separate departmental applications and/or 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.

1. **A Baccalaureate or Master's Degree as specified by the program:** The applicant must provide an official transcript showing an earned bachelor's or master's degree, depending on program requirements. 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 degree must have been awarded by an accredited college or university. Only transcripts received directly from an issuing institution are considered official. For domestic students, signed and sealed transcripts that have been in the applicant's possession can be used for admission purposes; however, official transcripts may later be requested. Personal copies are not acceptable as official documents.
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. 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. 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:** Some academic units may have separate departmental applications and/or additional requirements, such as portfolios, proficiency examinations, auditions, etc. Refer to the appropriate program description in this Bulletin for details.

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 (only if the department requires 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. 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.

For admission to a degree program, international applicants should allow **at least four months** for necessary documents to be processed by the appropriate degree program and the Graduate Admissions office. All test scores and credential evaluations must be on file in the Graduate Admissions Office (FedEx Institute of Technology Building, Suite 201) at least four months before the desired enrollment date. Applicants are urged to apply early to ensure full consideration.

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.

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.

Letters of Recommendation: If the program to which you are applying requires letters of recommendation, have them sent directly to the department. Some departments also require other material such a a statement of professional goals. Be sure to check with them.

Readmission into the University: International students who wish to apply for readmission to the University must meet the deadlines set for regular admissions.

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). 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 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.

Please contact James Kierulff in the Graduate School for more information.

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. With the exception of TOEFL, test scores must be sent directly from the testing center to:

University of Memphis
Graduate School
FedEx Institute of Technology Building, Suite 201
365 Innovation Drive
Memphis, TN 38152

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. . All test scores must be sent directly from the testing agency to The University of Memphis electronically using institution code: 1459.

IELTS: Graduate Admissions will accept scores on the International English Language Testing System (IELTS) in lieu of the TOEFL. The minimum acceptable IELTS score is 6.0.

PTE: Graduate Admissions will also accept scores on the Pearson Test of English (PTE) in lieu of the TOEFL . The minimum acceptable PTE score is 53.

Duolingo: For students affected by test center closures due to COVID-19, the University is temporarily accepting Duolingo as an alternative. A minimum score of 100 is required.

English Exam Alternative: The University is pleased to offer English Conditional Admission for qualified students. Students who are unable, or do not feel prepared, to take the TOEFL, IELTS, PTE or Duolingo can request conditional admission based on completing an English skills assessment, any required English skill building

sessions (www.memphis.edu/iei) and, if required, a TOEFL/IELTS/PTE/Duolingo exam while you are in the USA. For questions or guidance through the English conditional admission process, please contact James Kierulff (jkerulff@memphis.edu). Conditional admission may not be offered by all departments. Please check departmental graduate catalog webpages for program specific information.

- **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). Please check the website of the specific program to determine if this evaluation is required.
- **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.

Master's Degree Programs

The following admissions requirements are minimum standards that identify the pool of master's level applicants from which each academic unit makes its selection. Prospective students should check with the appropriate degree program for specific deadlines. For admission to a degree program, applicants should allow a reasonable amount of time for necessary documents to be processed by the appropriate department and Graduate Admissions.

- **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. The applicant must have earned an acceptable grade point average. In addition, transcripts from any other college or university attended must be requested. (Students who received bachelor's degrees from The University of Memphis may disregard this requirement.) Only transcripts received directly from an issuing institution are considered official. Signed and sealed transcripts that have been in the applicant's possession can be used for admission purposes; however, official transcripts must later be requested. Personal copies are not acceptable as official documents.

- **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 tests and what scores are acceptable. Scores on MAT exams written in less than 2 month intervals are not acceptable. Test scores must be sent directly to Graduate Admissions from the testing agency. 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. Check individual program descriptions for details.
- **Program Requirements:** Many academic units have separate departmental applications and/or additional requirements for admission. Check program descriptions for more information on requirements.

Education Specialist (ED.S.) Program

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

Doctoral Degree Programs

The following Graduate School admissions requirements are minimum standards that identify the pool of doctoral level applicants from which each academic area make their selections.

- **A Baccalaureate or Master's Degree as specified by the program:** The applicant must provide an official transcript showing an earned bachelor's or master's degree, depending on program requirements. The degree must have been awarded by an accredited college or university. In cases, where a program's accrediting body allows alternate admissions standards, exceptions may be made. Only transcripts received directly from an issuing institution are considered official. Personal copies are not acceptable as official documents.
- **Entrance Examinations:** New applicants may be required by the individual program to submit an appropriate entrance examination test score that is not more than five years old. Contact your program for information on which tests and what scores are acceptable. 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. 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.
- **Program Requirements:** Some academic units may have separate departmental applications and/or additional requirements, such as portfolios, proficiency examinations, auditions, etc. Refer to the appropriate program description in the Graduate Catalog for details.

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. Failure to so register will result in the student being charged tuition for each semester he or she did not enroll.

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 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. Retroactive approval will not be granted. A leave of absence does not extend time limit to degree.

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.

Entrance Examination Information

The GRE, PRAXIS I (PPST), and TOEFL can be taken on campus by computer. Call the University of Memphis ETS Computer-Based Testing Center (John W. Brister Hall 112) at 901.678.1457 to make an appointment.

Graduate Record Examination (GRE): Registration packets for the GRE may be obtained from the Testing Center (JWB 112).

Graduate Management Admissions Test (GMAT): Arrangements for taking the GMAT can be made by writing to GMAT, Educational Testing Service, Princeton, New Jersey 08540, by calling 1-800-462-8669, or by using www.gmac.com.

Miller Analogies Test (MAT): Students who wish to arrange for the MAT should contact the Testing Center, JWB 112.

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.

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 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

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. Those who register for 9 or more hours per semester in the academic year will be considered full-time students.

Doctoral students who have completed and passed their comprehensive exams will be allowed to enroll in 1 credit hour to be considered full-time students. These students are required to sign a statement on their comprehensive exam results form indicating that they will work at least part-time on their dissertation for the next four semesters following their comprehensive exams (excluding summers). If students are not working at least part-time on their dissertations they are required to notify the Graduate School. Working less than part-time may result in federal financial aid implications. After four semesters, this agreement must be reevaluated. Please contact the Graduate School at that time.

Student Classifciation	Number of hours to be considered full-time
Graduate Students (masters and graduate certificates)	9 hours
Doctoral students (pre-comps)	9 hours
Doctoral students (post-comps)	1 hour

Requests for overloads must be approved by the director of graduate studies in the student's college or school. Students in the School of Communication Sciences and Disorders must obtain the approval of the director of graduate studies in that 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.

Change of Major or Advancing from a Master's to a Doctoral Program

Graduate students who have previously declared a major but desire to make a change or who wish to advance from a master's program to a doctoral program should apply to Graduate Admissions to begin the process by completing a Change of Status form.

A Change of Major/Program is considered the equivalent of reapplying for admission. All admission requirements of the new major or program must be satisfied before a change can be granted; admission to the new program is never automatic.

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 90 days from the end of the semester or summer session in which it was received (see the University Calendar), the "I" will change to an "F," whether or not the student is enrolled. The faculty member may grant up to a 45-day 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.

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.

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.

Credit by Exam and Course Validation

For Credit by Exam and Course Validation information please the Registrar Office's website.

Transfer Credit

Credit towards a graduate degree does not transfer automatically. In general, 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 master's and 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 master's or doctoral degree. Individual academic units may set more stringent limitations. For students completing a graduate certificate program, only six hours may be accepted for transfer.

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 requirement. The University of Memphis requires a minimum of 750 contact minutes for each semester credit (2250 for a 3-hour course).

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.

If the student is transferring credit from a completed graduate degree, up to 15 credit hours may be transferred.

Appeals Procedures

Any graduate student has the right to appeal grade and retention decisions made by the program, college, or University in the implementation of University policy. If a student determines that individual circumstances warrant an appeal, the request for appeal must be filed in the University office responsible for the administration of that policy or the office specified in the policy statement.

NOTES:

1. "Class days" excludes Saturday, Sunday, and holidays.
2. The summer sessions are considered as one term for appeal purposes
3. The Graduate Appeals Committee shall be composed of a chair, seven members, and three alternates constituted as follows:

A chair designated by the Dean of the Graduate School and selected from the graduate faculty; a graduate faculty member and alternate designated by the Dean of the Graduate School; two graduate faculty members and two alternates elected by the University Council for Graduate Studies; three students and one alternate selected by the Dean of the Graduate School.

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 Resouces 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.

Retention Appeals

Any action that results in a student being terminated from their graduate program may be appealed under the following procedures. These actions may include a second failure on comprehensive examinations, failure on a thesis or dissertation oral, a second semester on academic probation, or an action of a program retention committee. Appeals are to be presented and hearings on appeals convened only during periods in which the academic units of the University are in session.

Step 1

1. **Time Limitation:** 20 class days following the date the termination was received.
   The student must submit a written request to the department chair for a hearing to appeal termination from the program. The request should state the factual basis for the appeal.
2. **Time Limitation:** 20 class days **into the next semester** following receipt of the appeal.
   In consultation with the student, the department chair will render a decision on the appeal. The student will be notified in writing of the department chair's decision and reasons supporting the decision. If the academic unit has no departments, the student proceeds immediately to Step 2.

Step 2*

1. **Time Limitation:** Five (5) class days **following Step 1.**
   The student may appeal the decision made in Step 1 by filing, with the director of graduate studies in the student's college, a written request for a hearing before the college's council for graduate studies (or its equivalent). The request should state the factual basis for the appeal of the chair's decision and include a copy of the chair's decision. The college's council for graduate studies may be convened if the college director of graduate studies finds merit in the student's appeal.
2. **Time Limitation:** Twenty (20) class days following the receipt of the written request.
   The college council for graduate studies will notify and invite the student and chair of the date, time, and location of the retention appeals hearing. If the college council agrees that the student should be reinstated, the council shall be empowered to reinstate the student. The student and chair will be notified in writing of the college council's decision and reasons supporting the decision.

***In the case of programs that are not represented on a college council, Step 2 will be omitted, and the appeal will be forwarded to the dean or designee of the department involved.**

Step 3

1. **Time Limitation:** Five (5) class days following Step 2.
   If the appeal cannot be resolved at the level of Step 2, the student may appeal the decision by filing, with the 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 factual basis for the appeal and include a copy of all documents from Step 1 and Step 2.
2. **Time Limitation:** Twenty (20) class days following the receipt of the college's decision.
   The Dean of the Graduate School or designee shall forward the request to the chair of the Graduate Appeals Committee. The chair shall distribute copies of the student appeal as well as decision letters from the department chair and/or college director to the members of the committee for consideration.

If the Committee finds the appeal merits a hearing, the Committee shall notify the Dean of the Graduate School or designee. The Dean of the Graduate School or designee will then notify the student, department chair, and college graduate director. A hearing will be scheduled in which the student, department chair (or designee), and college graduate director (or designee) are invited to present their cases before the Graduate Appeals Committee. The Graduate Appeals Committee will report their decision to the Dean of the Graduate School who will notify the student, department chair, and college graduate director in writing. The hearing may be attended remotely using available technology

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 Dean of the Graduate School or designee.

If the Graduate Appeals Committee finds that the student should be reinstated, it shall be empowered to reinstate the student. The Dean of the Graduate School or designee will notify all concerned parties, including the student, their department, and the University Council for Graduate Studies in writing of the decision and reasons supporting the decision

The decision of the Graduate Appeals Committee shall be final.

Termination Procedures

Graduate Students may be terminated from a program for a second failure on comprehensive examination, unsuccessful defense of thesis or dissertation, a second consecutive semester on academic probation, or an action of a program retention committee.

Procedures for notifying students of termination:

1. The Advisor informs the student of intended recommendation to terminate.
2. The student's Advisor consults the Graduate Coordinator of the program.
3. The Advisor, Graduate Coordinator, and/or Department Chair review the recommendation. If approved the Advisor, Graduate coordinator, and/or Department Chair sign and submit the termination form for review to the Associate Dean for Graduate Studies for the student's College or School. The Associate Dean will consult all relevant parties.
4. If approved, the Associate Dean for Graduate Studies signs and submits termination form to the Graduate School.
5. The Dean of the Graduate School reviews the recommended request for termination. If the request is approved, the Dean sends a letter of termination to the student and copies all parties. The Termination Form can be found on the Graduate School's website, located here: http://www.memphis.edu/gradschool/resources/forms_index.php

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 Student Handbook. 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 Conduct defines academic misconduct as all acts of cheating, plagiarism, forgery, and falsification.

The term "cheating" includes, but is not limited to:

- Using any unauthorized assistance in taking quizzes or tests
- Using sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments
- Acquiring tests or other academic material before such material is revealed or distributed by the instructor
- Misrepresenting papers, reports, assignments or other materials as the product of a student's sole independent effort
- Failing to abide by the instructions of the proctor concerning test-taking procedures
- Influencing, or attempting to influence, any University employee in order to affect a student's grade or evaluation
- Any forgery, alteration, unauthorized possession, or misuse of University documnts

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 Academic Discipline Committee, a standing University committee appointed by the President, 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 suspension. 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 the academic unit, and the Graduate School, a degree-seeking student is not making satisfactory progress toward degree completion, the student will 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 will 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.

Minimum Degree Requirements for Graduate Academic Programs

Graduate students are expected to be aware of and to comply with the general requirements for the degrees they are pursuing as outlined in the Graduate Catalog. In addition to the general requirements, students are expected to conform to any additional requirements set by the student's college, school, or academic unit. The Fogelman College of Business and Economics, the College of Education, and the Herff College of Engineering have additional college degree requirements. Please see Degree Programs for individual program requirements.

A wide variety of graduate programs of study are offered in The Graduate School at the University of Memphis. Candidates for a degree must design a plan in consultation with their major advisor and then obtain the appropriate approvals.

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

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 substantially 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 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. 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.

Additional Program Requirements

Each graduate program listed in this catalog has minimum degree requirements. In consultation with the faculty, the graduate coordinator of each program may specify any additional requirements, such as prerequisites, a reading knowledge of a foreign language, a working knowledge of statistics, or specific courses related to graduate or teaching assistantships.

Foreign Language Proficiency

A reading knowledge of at least one foreign language is required in several graduate programs. This requirement may be met in one of the following ways

- achieving a grade of B ("3.0") or better in a fourth-semester language course (e.g. FREN/GERM/ITAL/SPAN 2020),

- 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)
- 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/SPAN3303),
- 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),
- 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.

Time Limitation

All requirements for the degree must be completed in eight years. Courses older than these limits will not be allowed as credit toward the master's degree, although the grades will be calculated in the cumulative GPA. 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, but will not be accepted for graduation purposes unless a request for expired course grade removal has been granted (see Admission to Candidacy section below).

There are no exceptions to program time limits. However, students may request the option of validating old courses as described in the Academic Regulations section of the Graduate Catalog.

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. Some professional programs require a culminating experience instead of a comprehensive examination. Please see specific program requirements.

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 or by the specified deadline in this catalog.

Protocols and procedures for administration of comprehensive examinations can be obtained at the departmental level. It is the student's responsibility to confer with the appropriate academic department regarding the time and place of the examination.

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.

Results of comprehensive examinations are not graded in the way that courses are and so cannot be appealed, nor can they be changed after the form has been filed with the Graduate School . 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 on "Retention 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 "Master's Degree Candidacy Form" for the Master's Degree and a graduation application (Apply to Graduate - available in MyMemphis) must be filed by the deadline published in the Graduate Catalog, posted on academic department bulletin boards on campus, and available on the Graduate School web site. No exceptions will be made if both the graduation application and degree candidacy forms are not submitted by the stated deadlines.
2. If a student is writing a thesis, an approved Thesis/Dissertation Proposal Form must be filed with all necessary human or animal subjects approvals before any research is undertaken. See the section on "Regulatory Issues."
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 seven (7) hours of "C+," "C," or "C-" will be counted toward degree requirements.
4. The student must have at least a 3.0 average in all graduate work at the time the graduation application in My Memphis is filed.
5. Expired course grades can be removed from the calculation of a given student's cumulative GPA. 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.
6. The program must include a minimum of 70% of the total required hours as 7000 level courses.
7. All requirements of the Graduate School, the student's college, and the academic department must be met.
8. 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.
9. The student's graduate work up to this point must be acceptable in quality and quantity to the major advisor, department chair and/or director of graduate studies in the student's college, and the Dean of the Graduate School.

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.

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. An approved Thesis/Dissertation Proposal Form must be filed with any necessary human or animal subjects 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. If the thesis committee differs from the advisory committee, a new committee form must be filed with the Graduate School.

Continuous Enrollment Policy

The continuous enrollment policy applies to thesis, 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. Failure to so register will result in the student being charged tuition for each semester he or she did not enroll.

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 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. Retroactive approval will not be granted. A leave of absence does not extend time limit to degree.

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. Only one external graduate faculty member may serve as a voting member on a master's committee.

If the oral exam encompasses both the comprehensive and the defense, the results should be reported separately on the forms provided. 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.

Students who unsuccessfully defend their thesis will be assigned a "U" (unsatisfactory). The Graduate School will then send a letter of termination from the program.

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.

Second Master's Degree

Students who hold or are enrolled in a master's degree from The University of Memphis may pursue a second master's degree with a different major or degree if the academic unit accepts them. Up to 20% of the total combined credit hours for the two degree programs or fifteen credit hours (whichever is greater) may be shared. Shared credit hours must be approved by the advisor and graduate coordinator for each degree program. Two degrees may be pursued simultaneously or sequentially. Each degree must be completed within the eight year time limit.

Students may initiate a dual degree program to meet their educational and career goals. Student initiated programs require admission to both master's/professional programs and a plan of study approved by both graduate coordinators and the Graduate Coordinators and the Graduate School. The plan of study will show all the credit hours that will be earned in the two degrees.

Education Specialist

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. For additional information, please refer to the College of Education.

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 with the academic department; see the appropriate section in the Graduate Catalog. The student's program must be approved by the major 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 no more than two-thirds the number of hours required for the degree. 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.

Additional Program Requirements

Each graduate program listed in this catalog has minimum degree requirements. In consultation with the faculty, the coordinator of each graduate program may specify any additional requirements, such as prerequisites, a reading knowledge of a foreign language, a working knowledge of statistics, or specific courses related to graduate or teaching assistantships.

Foreign Language Proficiency

A reading knowledge of at least one foreign language is required in several graduate programs. This requirement may be met in one of the following ways

- achieving a grade of B ("3.0") or better in a fourth-semester language course (e.g. FREN/GERM/ITAL/SPAN 2020),
- 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)
- 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/SPAN3303),
- 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),
- 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.

Time Limitation

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. However, some academic departments may have more stringent time limitations. There are no exceptions to program time limitations. However, students may request the option of validating old courses taken at the University of Memphis as described in the "Academic Regulations" section of the Graduate Catalog.

Grades earned in courses at The University of Memphis older than program time limits will be shown on the transcript and calculated in the cumulative GPA, but will not be accepted for graduation purposes unless a request for expired course grade removal has been granted (see Admission to Candidacy section below).

Residency Requirement

Students must commit to full-time study for a minimum of two successive semesters after admission to the degree program to fulfill the residency requirement. Some academic departments do not count the summer term towards residency. The College of Education has an alternative residency program; refer to the appropriate section of this catalog or contact the College for additional information.

Advisory Committee

After admission to the doctoral program, the student will be assigned a major advisor, who must be a full member of the Graduate Faculty, to chair the student's Advisory Committee. This committee will work closely with the student to formulate an approved program of study. The program head, following consultation with the student and major advisor, will approve the appointment of a minimum of three members to the Advisory Committee. Only one external graduate faculty member may serve as a voting member on an advisory committee. These appointments will be forwarded to the Dean of the Graduate School. The advisory committee is not necessarily, but may be, the same as the dissertation committee (see below).

Qualifying Examination

Individuals seeking a doctoral degree may be required to take a qualifying examination administered by the academic department in which the student wishes to major. The examination may cover specialized and general knowledge of the major area as well as writing skill. The results of the qualifying exam should be used, in part, to plan the academic program. To be eligible to take this qualifying examination, the student must be fully admitted to the Graduate School. Academic departments may hold additional requirements.

Comprehensive Examination

When a student in good standing has completed all basic required coursework for the doctoral degree or is enrolled in the last semester of coursework (exclusive of dissertation hours), he/she must pass a comprehensive examination. This 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. Performance must be acceptable to the Advisory Committee (not more than one dissenting vote is allowed). 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 or by the specified deadline in the Graduate Catalog. Protocols and procedures for administration of comprehensive examinations can be obtained at the departmental level.

The comprehensive examination is not a course; therefore the results of the examination can not be appealed, nor can they be changed after the form has been filed with the Graduate School . Students may take the examination a second time, however. 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 on Retention Appeals.

A student may register for dissertation hours only after passing the comprehensive examination, submitting the results to the Graduate School, and submitting an approved "Doctoral Degree Candidacy" form to the Graduate School.

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. It is strongly recommended that one member be outside the discipline. Only one external graduate faculty member may serve as a voting member of a dissertation committee. If the dissertation committee differs from the advisory committee, a new committee form must be filed with the Graduate School.

Admission to Candidacy

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

The student must submit a graduation application ("Apply to Graduate") in the term the dissertation will be completed and submitted to Graduate School for final approval. This application is available in the student's MyMemphis account under the MyDegree tab. A student must have at least a 3.00 grade point average in all graduate work before applying to graduate.

The student must also submit a Doctoral Degree Candidacy Form, if one has not previously been submitted.

An approved Thesis/Dissertation Proposal Form must be filed with the Graduate School. Any necessary human or animal subjects approvals must be included before any research is undertaken. See the section on "Regulatory Issues."

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. Expired course grades can be removed from the calculation of a given student's cumulative GPA. 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.

No more than 15 hours of 6000-level courses may be applied to a doctoral degree. Individual departments may have more restrictive requirements.

Grades earned on courses taken during the student's final semester may not be used to correct GPA deficiencies. All coursework offered for the doctoral degree must have been completed within 10 years.

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

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 the Graduate School. Consult the academic department for the acceptable format. Students should also familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

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 approved 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."

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.

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.

Students who unsuccessfully defend their dissertation will be assigned a "U" (unsatisfactory) grade. The Graduate School will then send a letter of termination from the program.

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. See individual academic units for specific requirements. Failure to so register will result in the student being charged tuition for each semester he or she did not enroll.

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 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. Retroactive approval will not be granted. A leave of absence does not extend time limit to the degree.

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 dealing with the dissertation and its relation to the candidate's major field of study. The student's dissertation advisory committee will conduct this exam. All members must be present 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). The Graduate School will then send a letter of termination from the program.

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.

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 following paper work, in addition to Comprehensive Examination Results and Admission to Candidacy forms (filed before enrolling for dissertation hours), must be filed in the Graduate School by the stated deadline:

Students must "Apply to Graduate" by the deadline published in the Graduate Catalog, posted on academic unit bulletin boards, and available on-line for the term the dissertation will be complete. No exceptions will be made if a student does not complete an application to graduate by the stated deadlines.

The Dissertation Defense Results form, as soon as the defense has concluded.

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 each semester.

Second Doctoral Degree

Students who hold or are pursuing a doctoral degree from the University of Memphis may pursue a second doctoral degree with a different major or degree if the academic unit accepts them. Students pursuing two doctoral degrees must seek prior approval from each major professor and doctoral committee before being considered a doctoral candidate.

No more than 12 semester hours from one doctoral degree may be applied toward the other degree. The second academic unit will determine whether any credit from the former degree will be accepted toward the second degree. Any credit accepted toward the second degree must have been earned within the regular time limit requirements for the doctoral degree. Students must pass separate comprehensive examinations and successfully defend separate dissertations. Two degrees may be pursued simultaneously or sequentially.

Academic Services

- Academic Common Market
- Academic Personnel Services
- Cecil C. Humphreys
- Disability Resources for Students

- Extended Programs
- International Students Services in the Center for International Education Services
- Mid South ACT
- Minority Affairs
- Oakridge Associated Universities
- Psychological Services Center

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 www.sreb.org/programs/acm/acmindex.asp.

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 www.sreb.org/programs/acm/acmindex.asp.

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.

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.

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/.

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.

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.orau.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.orau.org.

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
- Information Technology
- Benjamin Hooks Institute for Social Change
- Bureau of Business and Economic Research
- Center for Applied Psychological Research
- Center for Earthquake Research and Information
- Center for Health Services Research
- Center for Manpower Studies
- Center for Research in Educational Policy
- Center for Research on Women
- Center for the Study of Higher Education
- Center for Urban Research and Extension
- Chucalissa Indian Village and Museum (C.H. Nash Museum)
- DNA Laboratory
- Ecological Research Center
- Edward J. Meeman Biological Station
- Institute of Egyptian Art and Archaeology
- Institute for Intelligent Systems
- Integrated Microscopy Center
- Marcus W. Orr Center for the Humanities
- Regional Economic Development Center
- Speech and Hearing Center
- Other Research Units
- Recognized Centers and Chairs of Excellence

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.

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

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

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. www.memphis.edu/psychology/centers/capr

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.

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

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 Research on Women

Founded in 1982, the Center for Research on Women (CROW), located in the College of Arts and Sciences, is nationally recognized for its pioneering work on race, class, and gender. CROW's mission is to conduct, promote, and disseminate scholarship on women and social inequality. Its approach to research, theory, and programming emphasizes the structural relationships among race, class, gender, and sexual identity, particularly in the U.S. South and among women of color.

CROW-affiliated faculty span the University. They are currently engaged in action-oriented, community-based research on women in Memphis and the U.S. South; in historically grounded research that makes visible global processes affecting the persistence of inequalities in the U.S. South; and in the development of feminist theories and methods.

CROW offers postdoctoral fellowships to scholars studying race and gender in the U.S. South and provides graduate assistantships to students enrolled in the MA program in sociology.

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

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

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 Biology 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 Biology 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.

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.

Regional Economic Development Center

The Regional Economic Development Center represents the University in its outreach function in the field of economic development planning. In providing technical and management assistance to the public and private sectors, the Center also serves as a laboratory for interdisciplinary research and service by faculty and graduate students in solving problems of urban and regional development.

The Center's professional planning staff have academic appointments and teach courses in the Division of City and Regional Planning.

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

- Anthropological Research Center
- 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
- W. Harry Feinstone Center for Genomic Research

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

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

Degree 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 - Data Analytics Concentration, (MS)

Master of Science Degree

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: accounting, accounting data analytics, and taxation.

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 3110, Intermediate Accounting I; ACCT 3120, Intermediate Accounting II; ACCT 3310, Cost Accounting; ACCT 3510, Individual Taxation; ACCT 4020 Accounting Systems; ACCT 4240, Auditing; and SCMS 3711, Business Analytics.
2. A minimum of 30 semester hours of approved graduate courses. The 30 graduate credits must include 21 hours in Accounting, with no more than 9 hours of 6000 level courses.

General Requirements: 18 hours

- ACCT 7521 - Taxation/Bus Entities
- ACCT 7140 - Financial Statement Analysis **
- ACCT 7211 - Advanced Financial Reporting **
- ACCT 6130 - Intermediate ACCT III **
- ACCT 6250 - Accounting Ethics/Regulation **
- ACCT 6320 - Mgr Decision Making/ACCT **

Data Analytics Electives: 12 hours (choose 4 of 5)

- MIS 7605 - Bus Database Systems **
- MIS 7190 - Programing For Business
- MIS 7620 - Business Machine Learning I **
- MIS 7621 - Business Machine Learning II

- MIS 7660 - Advanced Data Management

Note:

ACCT courses numbered 70XX, e.g., ACCT 7050 and ACCT 7080, are not acceptable choices. An internship does not count as credit toward the degree, but is reported on the transcript. There is a limitation of three 6000-level courses for credit toward the MS degree.

[1] Not required if you took Intermediate Accounting as a two-course sequence.

[2] If you passed this course or its equivalent in an undergraduate program you must select a different accounting elective instead.

Accounting - General Accounting Concentration, (MS)

Master of Science Degree

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: accounting, accounting data analytics, and taxation.

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 3110, Intermediate Accounting I; ACCT 3120, Intermediate Accounting II; ACCT 3310, Cost Accounting; ACCT 3510, Individual Taxation; ACCT 4020 Accounting Systems; ACCT 4240, Auditing; and SCMS 3711, Business Analytics.
2. A minimum of 30 semester hours of approved graduate courses. The 30 graduate credits must include 21 hours in Accounting, with no more than 9 hours of 6000 level courses.

General Requirements: 18 hours

- ACCT 7521 - Taxation/Bus Entities
- ACCT 7140 - Financial Statement Analysis **
- ACCT 7211 - Advanced Financial Reporting **
- ACCT 6130 - Intermediate ACCT III **
- ACCT 6250 - Accounting Ethics/Regulation **
- ACCT 6320 - Mgr Decision Making/ACCT **

General: 12 hours

Required: 3 hours

- ACCT 7242 - Advanced Auditing **

1 Elective from:

- ACCT 7412 - Legal/Acctg Aspects Entrep
- ACCT 7626 - Financial Report/Audit Stand **
- ACCT 7627 - Regulatory/Business Envrnmnt **
- ACCT 7510 - Tax Research & Theory

Required 2 Electives from:

- MIS 7605 - Bus Database Systems **
- MIS 7190 - Programing For Business
- MIS 7620 - Business Machine Learning I **
- MIS 7621 - Business Machine Learning II
- MIS 7660 - Advanced Data Management

Note:

ACCT courses numbered 70XX, e.g., ACCT 7050 and ACCT 7080, are not acceptable choices. An internship does not count as credit toward the degree, but is reported on the transcript. There is a limitation of three 6000-level courses for credit toward the MS degree.

[1] Not required if you took Intermediate Accounting as a two-course sequence.

[2] If you passed this course or its equivalent in an undergraduate program you must select a different accounting elective instead.

Accounting - Taxation Concentration, (MS)

Master of Science Degree

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: accounting, accounting data analytics, and taxation.

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 3110, Intermediate Accounting I; ACCT 3120, Intermediate Accounting II; ACCT 3310, Cost Accounting; ACCT 3510, Individual Taxation; ACCT 4020 Accounting Systems; ACCT 4240, Auditing; and SCMS 3711, Business Analytics.
2. A minimum of 30 semester hours of approved graduate courses. The 30 graduate credits must include 21 hours in Accounting, with no more than 9 hours of 6000 level courses.

General Requirements: 18 hours

- ACCT 7521 - Taxation/Bus Entities
- ACCT 7140 - Financial Statement Analysis **
- ACCT 7211 - Advanced Financial Reporting **

- ACCT 6130 - Intermediate ACCT III **
- ACCT 6250 - Accounting Ethics/Regulation **
- ACCT 6320 - Mgr Decision Making/ACCT **

Taxation: 12 Hours

Required: 6 Hours

- ACCT 7510 - Tax Research & Theory
- ACCT 7511 - Tax- Partnships/Prtnrs **

Required 1 Elective from:

- ACCT 7242 - Advanced Auditing **
- ACCT 7412 - Legal/Acctg Aspects Entrep
- ACCT 7626 - Financial Report/Audit Stand **
- ACCT 7627 - Regulatory/Business Envrnmnt **

Required 1 Elective from

- MIS 7605 - Bus Database Systems **
- MIS 7190 - Programing For Business
- MIS 7620 - Business Machine Learning I **
- MIS 7621 - Business Machine Learning II
- MIS 7660 - Advanced Data Management

Note:

ACCT courses numbered 70XX, e.g., ACCT 7050 and ACCT 7080, are not acceptable choices. An internship does not count as credit toward the degree, but is reported on the transcript. There is a limitation of three 6000-level courses for credit toward the MS degree.

[1] Not required if you took Intermediate Accounting as a two-course sequence.

[2] If you passed this course or its equivalent in an undergraduate program you must select a different accounting elective instead.

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 Degree Requirements for Graduate Academic Programs) 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, three letters of recommendation, and complete the GRE. All applicants are encouraged to submit a writing sample and those applying for a Graduate Assistantship are required to submit a writing sample. In addition to their undergraduate academic record, applicants will be considered on the basis of their GRE scores, 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). One hour of ANTH 7985 will be devoted to professional development and practicum preparation modules in the first semester.
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. Satisfactory performance on a comprehensive exam.
6. 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, environmental design, 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.

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: 2023

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

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, the Doctor of Architecture. A program may be granted an eight-year, three-year, or two-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may require a pre-professional undergraduate degree in architecture for admission. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

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). 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 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 Thesis Studio (ARCH 7996) or Professional Project Studio (ARCH 7995). The thesis or professional project must be approved by a faculty committee. Students 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
- ART 7411 - Methods for Elem Art
- ART 7423 - Methods Art Second Schools

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.

NOT ACCEPTING APPLICATIONS AT THIS TIME

The International MBA is designed to assist students in meeting their goal of acquiring knowledge of international business, even if they do not have a traditional business background or a second language. The International MBA is open to graduates of business, foreign language, or liberal arts programs. It is a full-time, lock-step program (including one summer), with a minimum of 36 credit hours of required coursework.

Coursework for the International MBA degree includes 30 hours of business core coursework, identical to the other MBA programs in the Fogelman College of Business and Economics. The IMBA includes an additional 6 credit hours, 3 of which are devoted to an international experience (study abroad and internship abroad). Students secure

an appropriate internship (with some assistance from the IMBA program, but ultimate responsibility for obtaining the internship lies with the student), which must be approved by the IMBA program before academic credit may be awarded.

Program objectives are: (1) An understanding of the general context of business in society including: ethical and global issues; influence of the political, legal, social, and technological environment; the impact of demographic diversity on organizations; and knowledge of the essential foundations of the functional areas of business. (2) Acquisition of a professional-level knowledge of: financial reporting and analysis; managing organizations; strategic use of science and technology; and creating value in the global arena. (3) Competence in business communication in a foreign language (except in the World Regions Track). (4) Building knowledge and skill in the operation of one or more international businesses. (5) Ability to compete effectively for jobs in the profit and not-for-profit sector.

Program Admission:

Applicants must have:

1. An undergraduate degree from an accredited college or university.
2. A Graduate School application for admission and have paid the appropriate fee.
3. An official transcript from each college or university attended with course by course credential evaluations (from a credential evaluation organization that is a member of the NACES) for degrees earned from accredited foreign educational institutions.
4. Satisfactory performance on undergraduate course work and a recent (5 years or less) GMAT or GRE examination score.
5. Acceptable TOEFL score for international applicants.

All applicants to the International MBA program must also submit a current resume, personal statement, three letters of recommendation, and an IMBA Applicant Profile form. Students must also pay the $500 seat fee (which is subsequently applied to their first annual program fee). Qualified applicants enter the program during the Fall Semester only. The program website is www.memphis.edu/internationalmba.

Program Requirements:

Language and Culture Options

The International MBA Program offers three (3) Business Track options. Students must choose from one of the following:

- Regional Business Track: for U.S. students with three years (six semesters) of foreign language proficiency. Students in this track will concentrate on the business practices, culture and language of the students' preferred region of the world.
- World Region Business Track: for U.S. students who wish to specialize in the practice of business in geographical regions where English is the accepted business language.
- U.S. Business Track: for international students who have English as their second language. This track provides in-depth exposure to U.S. business practices and culture.

Coursework

Core Knowledge and Skills (30 hours)

- MIS 7650 - Info Syst Global Enterprise **
- FIR 7155 - Global Financial Mgmt **
- ACCT 7080 - Financial/Managerial Acct Mgrs **
- ECON 7100 - Econ for Global Executive **
- SCMS 7313 - Supply Chain Operations Mgmt **
- SCMS 7110 - Intro to Business Analytics **
- MKTG 7140 - Global Strategic Marketing **
- MGMT 7160 - Global Strategic Mgmt **

International MBA Program Requirements (6 hours)

- BA 7800 - Internship In Business

Business Language (differs by track) (3 hours)

Study Abroad Academic Requirements and Fees

Grades for classes undertaken during a study abroad experience at one of the University of Memphis' partner institutions overseas will be transferred back to the University of Memphis and are subject to the university's policy on graduate transfer credit. Credit toward a degree does not transfer automatically; however, the program is designed for students who study abroad so every reasonable effort is made to transfer credit from partner institutions. 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 International MBA advisor or program graduate coordinator. Transferred courses from overseas partner institutions will appear on student transcripts as BA 7920 with a "Satisfactory" (S) grade. Students will need to obtain an evaluation of their overseas transcript by a professional credential evaluation firm (for a list of such firms, please visit www.naces.org). The evaluation firm must receive the transcript directly from the overseas university and submit a course by course evaluation directly to the IMBA Program advisor. Evaluations or transcripts issued to the student cannot be used in the transfer credit process. Fees charged to the student for such services vary by evaluating agency and is the responsibility of the student.

International MBA students are required to pay any fees required by the University of Memphis International Programs Office related to study abroad. Students are also responsible for round-trip airfare, passport fees, books, medical insurance, and any other expenses related to studying and interning abroad.

IMBA Graduate Assistantships

Graduate assistantships are available to students enrolled in the International MBA program. Graduate assistantships are competitive and are awarded only to highly qualified applicants. Graduate assistantships require students to supply 20 hours of service to the University of Memphis per week. Graduate assistants who work at least 10 hours per week are classified as in-state students for fee-paying purposes for the term of their appointment, only. In-state graduate assistants working at least 10 hours per week receive a waiver of ONE HALF of tuition and fees during the academic year. Graduate assistants who work 20 hours per week receive full waiver of tuition and fees during the academic year. (Tuition and fee benefits do not apply to study abroad or the summer semester.) University supported graduate assistants are expected to carry at least a 9-credit-hour load each semester of the academic year. Graduate assistants must maintain a 3.0 GPA to retain their assistantships.

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 official GRE or MAT scores, 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 12 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). Students choosing the research emphasis are not required to do the Graduate Media Practicum.
3. Required Courses. All students are required to complete a 12-hour core consisting of Pro Seminar, Media Portfolio, Mass Communication Theory, Mass Communication Research Methods, and (except for students

doing the research track) the Graduate Media Practicum. Students must complete Pro Seminar by the end of their first semester.

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 6702 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 original data and analyze it, 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).

   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.

   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.

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 **

and

- EDPR 7521 - Introduction to Research Design and Methodology ** (best suited for Student Affairs Administration concentration)
  or
- EDPR 7524 - Res Meths for Schl Accntblty (best suited for the School Administration and Supervision Concentration)

School Administration and Supervision Concentration (24 hours):

- LDPS 7141 - The Principalship **
- LEAD 7004 - Instructional Leadership **
- LDPS 7150 - Educational Law **
- LDPS 7131 - School Business Mgmt
- LEAD 7210 - Field Experiences **
- LDPS 7140 - Ldrshp Instructionl Improvmnt
- LDPS 7120 - Supervisory Process

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 Degree Requirements for Graduate Academic Programs) 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 **
  and
- EDPR 7521 - Introduction to Research Design and Methodology ** (best suited for Student Affairs Administration concentration)
  or
- EDPR 7524 - Res Meths for Schl Accntblty (best suited for the School Administration and Supervision Concentration)

Student Affairs Administration Course Requirements (30 hours):

- HIAD 7440 - Stdnt Prsnl Svc High Ed **
- HIAD 7443 - College Environments **
- HIAD 7444 - Multiculturalism Coll Camp **
- HIAD 7447 - Assessment in Higher Education
- HIAD 7442 - College Student Dev **
- HIAD 7210 - Foundations of Academic Advising
- HIAD 7060 - Intrnshp Hi/Adult Ed **

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
3. Application Packet: Instructions for completing this step are available under the MALS admissions information link at 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

M. Paige Powell, PhD

Associate Professor, MHA Program Director and Graduate Coordinator

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901.678.2883

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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 fifty-three (53) semester hours. Forty-seven (47) hours are taken in the core curriculum and six (6) hours of electives chosen in consultation with an advisor. The six (6) hours of electives allow the student to extend basic knowledge gained in the core curriculum and can include such areas as

health administration, public health, economics, marketing, finance, public policy, public administration, and management. The comprehensive examination (HADM 7210) must be successfully completed during the semester in which the student expects to graduate.

Core Courses

- HADM 7100 - Day 1 Sem I: Leadership Skills
- HADM 7101 - Day 1 Sem II: LeadershipSkills
- HADM 7102 - Health Care Law **
- HADM 7103 - Health Planning **
- HADM 7105 - Hlth Policy & Org Hlth Svs **
- HADM 7108 - Health Care Finance I **
- HADM 7109 - Health Information Systems **
- HADM 7110 - Leadershp/Org Chg in Hlth Care **
- HADM 7116 - Adm Health Serv Orgs **
- HADM 7204 - Healthcare Qual & Outcms Mgmt **
- HADM 7206 - Managerial Epidemiology **
- HADM 7208 - Health Care Finance II **
- HADM 7209 - Quant Methods for Hlth Svcs **
- HADM 7210 - Comp Expr/Hlth Care Mgmt
- HADM 7605 - Human Resources Admin **
- PUBH 7710 - HealthCare Economics
- HADM 7190 - Internship Hlth Admn I

Electives

Six hours will be taken with the approval of the faculty advisor.

Possible electives include courses within the concentration areas, as well as:

- HADM 7130 - Quality Tools in HC Management
- HADM 7140 - Population Health Management **
- PUBH 7502 - Hlth Policy, Theory & Methods
- PUBH 7505 - Aging, Pub Hlth, & Hlth Svs
  Other courses may serve as electives; students should check with their advisors

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 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; 18 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 **
- PUBH 7120 - Environmental Health I **
- PUBH 7150 - Biostatistical Methods I **
- PUBH 7160 - Soc/Behav Science Principles **
- PUBH 7170 - Epidemiology in PUBH **
- PUBH 7180 - Foundations of PUBH **

Concentration courses include:

Biostatistics

- PUBH 7309 - Appl Surv Analys in Pub Hlth

- PUBH 7311 - Appl Categorical Data Analys
- PUBH 7152 - Biostatistical Methods II **
- PUBH 7310 - Mixed Model Regression Analys

Electives (18 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
- COMM 7012 - Seminar Health Comm **
- HADM 7107 - Health Care Ethics
- HADM 7109 - Health Information Systems **
- NUTR 6602 - Community Nutrition
- NUTR 6902 - Study Tour/Foods/Nutr
- PUBH 7104 - Large Data Sets/PUBH Research
- PUBH 7310 - Mixed Model Regression Analys
- PUBH 7311 - Appl Categorical Data Analys
- PUBH 7334 - Comm Based Part Resrch Mthds
- PUBH 7337 - Public Health Nutrition
- PUBH 7338 - Critical Issues in Global Hlth **
- PUBH 7340 - Behavioral Intervention Develp **
- PUBH 7345 - Health Literacy
- PUBH 7347 - Qualitative Mtds Hlth Research
- PUBH 7445 - Genetic Epidemiology
- PUBH 7450 - Randomized Clinical Trials I
- PUBH 7190 - Adv SAS for PUBH Prof 1
- PUBH 7191 - Adv SAS for PUBH Prof II
- PUBH 7501 - Health Systems Organizations
- PUBH 7502 - Hlth Policy, Theory & Methods
- SOCI 7853 - Gender And Health
- PUBH 7309 - Appl Surv Analys in Pub Hlth

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 - Environmental Health Concentration, (MPH)

Master of Public Health (MPH) Degree Program

Vikki Nolan, DSc, MPH
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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; 18 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 **
- PUBH 7120 - Environmental Health I **
- PUBH 7150 - Biostatistical Methods I **
- PUBH 7160 - Soc/Behav Science Principles **
- PUBH 7170 - Epidemiology in PUBH **
- PUBH 7180 - Foundations of PUBH **

Concentration courses include:

Environmental Health

- PUBH 7124 - Environmental Toxicology **
- PUBH 7128 - Envrnmnt Policy/DecisionMaking **
- PUBH 7129 - Envrnmntl Sampling & Analysis **
- PUBH 7126 - Prin Exposure/Risk Assessmnt **

Electives (18 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
- COMM 7012 - Seminar Health Comm **
- HADM 7107 - Health Care Ethics
- HADM 7109 - Health Information Systems **
- NUTR 6602 - Community Nutrition
- NUTR 6902 - Study Tour/Foods/Nutr
- PUBH 7104 - Large Data Sets/PUBH Research
- PUBH 7310 - Mixed Model Regression Analys
- PUBH 7311 - Appl Categorical Data Analys
- PUBH 7334 - Comm Based Part Resrch Mthds
- PUBH 7337 - Public Health Nutrition
- PUBH 7338 - Critical Issues in Global Hlth **
- PUBH 7340 - Behavioral Intervention Develp **
- PUBH 7345 - Health Literacy
- PUBH 7347 - Qualitative Mtds Hlth Research
- PUBH 7445 - Genetic Epidemiology
- PUBH 7450 - Randomized Clinical Trials I
- PUBH 7190 - Adv SAS for PUBH Prof 1
- PUBH 7191 - Adv SAS for PUBH Prof II
- PUBH 7501 - Health Systems Organizations
- PUBH 7502 - Hlth Policy, Theory & Methods
- SOCI 7853 - Gender And Health

- PUBH 7309 - Appl Surv Analys in Pub Hlth

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.

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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 - Epidemiology Concentration, (MPH)

Master of Public Health (MPH) Degree Program

Vikki Nolan, DSc, MPH
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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; 18 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 **
- PUBH 7120 - Environmental Health I **
- PUBH 7150 - Biostatistical Methods I **
- PUBH 7160 - Soc/Behav Science Principles **
- PUBH 7170 - Epidemiology in PUBH **
- PUBH 7180 - Foundations of PUBH **

Concentration courses include:

Epidemiology

- PUBH 7152 - Biostatistical Methods II **
- PUBH 7141 - Epidemiologic Survey Method **
- PUBH 7172 - Epidemiology PUBH II **

Plus any one of the following 4 applied "topics " courses:

- PUBH 7140 - Epidemiology Chronic Disease
- PUBH 7174 - Epidemiology PUBH III
- PUBH 7442 - Cancer Epidemiology
- PUBH 7443 - Infectious Disease Epidemiolgy **

Electives (18 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
- COMM 7012 - Seminar Health Comm **

- HADM 7107 - Health Care Ethics
- HADM 7109 - Health Information Systems **
- NUTR 6602 - Community Nutrition
- NUTR 6902 - Study Tour/Foods/Nutr
- PUBH 7104 - Large Data Sets/PUBH Research
- PUBH 7310 - Mixed Model Regression Analys
- PUBH 7311 - Appl Categorical Data Analys
- PUBH 7334 - Comm Based Part Resrch Mthds
- PUBH 7337 - Public Health Nutrition
- PUBH 7338 - Critical Issues in Global Hlth **
- PUBH 7340 - Behavioral Intervention Develp **
- PUBH 7345 - Health Literacy
- PUBH 7347 - Qualitative Mtds Hlth Research
- PUBH 7445 - Genetic Epidemiology
- PUBH 7450 - Randomized Clinical Trials I
- PUBH 7190 - Adv SAS for PUBH Prof 1
- PUBH 7191 - Adv SAS for PUBH Prof II
- PUBH 7501 - Health Systems Organizations
- PUBH 7502 - Hlth Policy, Theory & Methods
- SOCI 7853 - Gender And Health
- PUBH 7309 - Appl Surv Analys in Pub Hlth

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 - Generalist (MPH)

Master of Public Health (MPH) Degree Program

Vikki Nolan, DSc, MPH
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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; 18 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 **
- PUBH 7120 - Environmental Health I **
- PUBH 7150 - Biostatistical Methods I **
- PUBH 7160 - Soc/Behav Science Principles **
- PUBH 7170 - Epidemiology in PUBH **
- PUBH 7180 - Foundations of PUBH **

Electives (18 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
- COMM 7012 - Seminar Health Comm **
- HADM 7107 - Health Care Ethics
- HADM 7109 - Health Information Systems **
- NUTR 6602 - Community Nutrition
- NUTR 6902 - Study Tour/Foods/Nutr
- PUBH 7104 - Large Data Sets/PUBH Research
- PUBH 7310 - Mixed Model Regression Analys
- PUBH 7311 - Appl Categorical Data Analys
- PUBH 7334 - Comm Based Part Resrch Mthds
- PUBH 7337 - Public Health Nutrition
- PUBH 7338 - Critical Issues in Global Hlth **
- PUBH 7340 - Behavioral Intervention Develp **
- PUBH 7345 - Health Literacy
- PUBH 7347 - Qualitative Mtds Hlth Research
- PUBH 7445 - Genetic Epidemiology
- PUBH 7450 - Randomized Clinical Trials I
- PUBH 7190 - Adv SAS for PUBH Prof 1
- PUBH 7191 - Adv SAS for PUBH Prof II
- PUBH 7501 - Health Systems Organizations
- PUBH 7502 - Hlth Policy, Theory & Methods
- SOCI 7853 - Gender And Health
- PUBH 7309 - Appl Surv Analys in Pub Hlth

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

Master of Public Health - Health Systems and Policy Concentration, (MPH)

Master of Public Health (MPH) Degree Program

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Program Admission

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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; 18 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 **
- PUBH 7120 - Environmental Health I **
- PUBH 7150 - Biostatistical Methods I **
- PUBH 7160 - Soc/Behav Science Principles **
- PUBH 7170 - Epidemiology in PUBH **
- PUBH 7180 - Foundations of PUBH **

Concentration courses include:

Health Systems and Policy

- PUBH 7710 - HealthCare Economics
- HADM 7109 - Health Information Systems **
- HADM 7204 - Healthcare Qual & Outcms Mgmt **
- PUBH 7502 - Hlth Policy, Theory & Methods

Electives (18 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
- COMM 7012 - Seminar Health Comm **
- HADM 7107 - Health Care Ethics
- HADM 7109 - Health Information Systems **
- NUTR 6602 - Community Nutrition
- NUTR 6902 - Study Tour/Foods/Nutr
- PUBH 7104 - Large Data Sets/PUBH Research
- PUBH 7310 - Mixed Model Regression Analys
- PUBH 7311 - Appl Categorical Data Analys
- PUBH 7334 - Comm Based Part Resrch Mthds
- PUBH 7337 - Public Health Nutrition
- PUBH 7338 - Critical Issues in Global Hlth **
- PUBH 7340 - Behavioral Intervention Develp **
- PUBH 7345 - Health Literacy
- PUBH 7347 - Qualitative Mtds Hlth Research
- PUBH 7445 - Genetic Epidemiology
- PUBH 7450 - Randomized Clinical Trials I
- PUBH 7190 - Adv SAS for PUBH Prof 1
- PUBH 7191 - Adv SAS for PUBH Prof II
- PUBH 7501 - Health Systems Organizations
- PUBH 7502 - Hlth Policy, Theory & Methods
- SOCI 7853 - Gender And Health
- PUBH 7309 - Appl Surv Analys in Pub Hlth

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 - Social and Behavioral Sciences 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; 18 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 **
- PUBH 7120 - Environmental Health I **
- PUBH 7150 - Biostatistical Methods I **
- PUBH 7160 - Soc/Behav Science Principles **
- PUBH 7170 - Epidemiology in PUBH **
- PUBH 7180 - Foundations of PUBH **

Concentration courses include:

Social and Behavioral Sciences

- PUBH 7014 - Public Health Communication *
- PUBH 7130 - Social Determinants of Health **
- PUBH 7132 - Health Program Evaluation **
- PUBH 7340 - Behavioral Intervention Develp **

Note:

** PUBH 7345 - Health Literacy may be substituted for PUBH 7014.*

Electives (18 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
- COMM 7012 - Seminar Health Comm **
- HADM 7107 - Health Care Ethics
- HADM 7109 - Health Information Systems **
- NUTR 6602 - Community Nutrition
- NUTR 6902 - Study Tour/Foods/Nutr
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- PUBH 7337 - Public Health Nutrition
- PUBH 7338 - Critical Issues in Global Hlth **
- PUBH 7340 - Behavioral Intervention Develp **
- PUBH 7345 - Health Literacy

- PUBH 7347 - Qualitative Mtds Hlth Research
- PUBH 7445 - Genetic Epidemiology
- PUBH 7450 - Randomized Clinical Trials I
- PUBH 7190 - Adv SAS for PUBH Prof 1
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- PUBH 7501 - Health Systems Organizations
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- SOCI 7853 - Gender And Health
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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 - 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

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Program Admission

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- PUBH 7170 - Epidemiology in PUBH **
- PUBH 7180 - Foundations of PUBH **

Concentration courses include:

Urban Health

- ANTH 6571 - Race and Health Disparities
- PUBH 7002 - Comm Hlth Assessmt & Prog Plan **
- PUBH 7004 - Interdis Approach PH Challenge
- PUBH 7132 - Health Program Evaluation **
- PUBH 7335 - Struct/Environ Iss/Urban Comm **

MPH online course notes

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Master of Public Health – Professional Degree – 12 months (MPH)

Master of Public Health (MPH) Degree Program

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- PUBH 7170 - Epidemiology in PUBH **
- PUBH 7180 - Foundations of PUBH **

Electives (18 hours)

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- HADM 7109 - Health Information Systems **
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- PUBH 7311 - Appl Categorical Data Analys
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- PUBH 7337 - Public Health Nutrition
- PUBH 7338 - Critical Issues in Global Hlth **
- PUBH 7340 - Behavioral Intervention Develp **
- PUBH 7345 - Health Literacy
- PUBH 7347 - Qualitative Mtds Hlth Research
- PUBH 7445 - Genetic Epidemiology
- PUBH 7450 - Randomized Clinical Trials I
- PUBH 7190 - Adv SAS for PUBH Prof 1
- PUBH 7191 - Adv SAS for PUBH Prof II
- PUBH 7501 - Health Systems Organizations
- PUBH 7502 - Hlth Policy, Theory & Methods
- SOCI 7853 - Gender And Health
- PUBH 7309 - Appl Surv Analys in Pub Hlth

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

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Retention Requirements

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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. GRE General Test scores are required and are an important factor for admission. This requirement may be waived for applicants to the Teaching of Mathematics concentration who have a graduate degree (master's degree or higher) already or who have obtained the Graduate Certificate in the Teaching of Mathematics, 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.
3. Two letters of recommendation are required.
4. 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. 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

Each student must pass a final written four-hour comprehensive examination which may be broken into several parts at the department's discretion. The written comprehensive examination covers topics from four courses, each consisting of at least three credit hours of course work.

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.

- MATH 7996 - Thesis

Note:

Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

Specific Degree Requirements

Applied Mathematics Concentration

The following courses are required:

- MATH 6242 - Linear Algebra
- MATH 6391 - Partial Diffrntl Equation I
- MATH 7350 - Real Variables I

At least three of the following elective courses are required:

- MATH 6721 - Numerical Analysis
- MATH 7016 - Fourier Analysis
- MATH 7351 - Real Variables II
- MATH 7361 - Complex Analysis
- MATH 7504 - Partial Differential Equations

The program must include at least 12 credit hours in the following broadly defined core categories:

Calculus of Variations and Optimization, Control Theory, Differential Equations, Financial Mathematics, Mathematical Physics, Modeling, Numerical Analysis and Scientific Computation. At least 6 of these 12 credit hours must be taken in the same core category. MATH 7996 does not count towards the required credit hours in the core categories.

The written comprehensive examination for students choosing the non-thesis option includes as topics:

- MATH 7350 - Real Variables I

- six credit hours of course work in one of the core categories (see item c. above)
- plus an additional course approved by the department

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. GRE General Test scores are required and are an important factor for admission. This requirement may be waived for applicants to the Teaching of Mathematics concentration who have a graduate degree (master's degree or higher) already or who have obtained the Graduate Certificate in the Teaching of Mathematics, 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.
3. Two letters of recommendation are required.
4. 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. 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

Each student must pass a final written four-hour comprehensive examination which may be broken into several parts at the department's discretion. The written comprehensive examination covers topics from four courses, each consisting of at least three credit hours of course work.

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.

- MATH 7996 - Thesis

Note:

Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

Specific Degree Requirements

Mathematics Concentration

The following courses are required:

- MATH 6242 - Linear Algebra
- MATH 6411 - Topology
- MATH 7261 - Algebraic Theory I
- MATH 7350 - Real Variables I

At least four of the following elective courses are required:

- MATH 7016 - Fourier Analysis
- MATH 7235 - Combinatorics
- MATH 7237 - Graph Theory
- MATH 7262 - Algebraic Theory II
- MATH 7351 - Real Variables II
- MATH 7352 - Ergodic Theory
- MATH 7355 - Functional Analysis I
- MATH 7356 - Functional Analysis
- MATH 7361 - Complex Analysis
- MATH 7411 - Point Set Topology

The written comprehensive examination for students choosing the non-thesis option includes as topics:

- MATH 7261 - Algebraic Theory I
- MATH 7350 - Real Variables I
- Two additional courses approved by the department.

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. GRE General Test scores are required and are an important factor for admission. This requirement may be waived for applicants to the Teaching of Mathematics concentration who have a graduate degree (master's degree or higher) already or who have obtained the Graduate Certificate in the Teaching of Mathematics, 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.
3. Two letters of recommendation are required.
4. 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. 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

Each student must pass a final written four-hour comprehensive examination which may be broken into several parts at the department's discretion. The written comprehensive examination covers topics from four courses, each consisting of at least three credit hours of course work.

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.

- MATH 7996 - Thesis

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
- MATH 7642 - Experimental Design
- MATH 7643 - Least Sq/Regr Analysis
- MATH 7647 - Non-Param Stat Meth
- MATH 7654 - Inference Theory
- MATH 7685 - Simulation & Computing
- MATH 7762 - Survival Analysis

The following elective courses are required:

Either
- MATH 7645 - Sampling Techniques

or
- MATH 7657 - Multivar Stat Meth

and either
- MATH 7660 - App Time Series Analy

or
- MATH 7670 - App Stochastic Models

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
- MATH 7654 - Inference Theory
- 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

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. GRE General Test scores are required and are an important factor for admission. This requirement may be waived for applicants to the Teaching of Mathematics concentration who have a graduate degree (master's degree or higher) already or who have obtained the Graduate Certificate in the Teaching of Mathematics, 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.
3. Two letters of recommendation are required.
4. 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. 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

Each student must pass a final written four-hour comprehensive examination which may be broken into several parts at the department's discretion. The written comprehensive examination covers topics from four courses, each consisting of at least three credit hours of course work.

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.

- MATH 7996 - Thesis

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
- MATH 6051 - Postsecondary Proof Methods
- MATH 6614 - Probability/Statistics
- MATH 7281 - Foundations of Linear Algebra
- MATH 7282 - Foundations of Algebra
- MATH 7383 - Concepts of Calculus 1
- MATH 7384 - Concepts of Calculus 2
- MATH 7385 - Concepts of Multivariable Calculus
- MATH 7391 - Foundations of Differential Equations
- MATH 7601 - Postsecondary Statistics

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
- MECH 7341 - Engineering Analys I
- MECH 7342 - Engineering Analys II

Non-Thesis Option:

Successful completion of 33 semester hours total to include 3 hours each in MECH 7341 and MECH 7342. Of the remaining 27 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 Analys I
- MECH 7342 - Engineering Analys II
- MECH 7992 - Research Project

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 Degree Requirements for Graduate Academic Programs" 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 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 - Biblio & Rsrch Methods

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

Choose one of the following (3 hours)

- MUAP 7800 - Internship/Music Perform
- MUSE 7002 - Teaching Music in Higher Edu

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

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 - Biblio & Rsrch Methods

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

Score Study and Aural Training (2 hours)

- MUAP 7703 - Score Study/Aural Train

Choose one of the following (3 hours)

- MUAP 7800 - Internship/Music Perform
- MUSE 7002 - Teaching Music in Higher Edu

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

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 - Biblio & Rsrch Methods

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
- MUAP 7202 - Jazz Combo

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
- MUHL 6806 - History Of Jazz
- MUSE 7520 - Jazz Pedagogy
- MUTC 7104 - Analytic Studies Jazz

Choose one of the following (3 hours)

- MUAP 7999 - Recital
- MUID 7699 - Media Music Prod Prac
- MUHL 7996 - Thesis

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
- MUSE 7222 - Rsrch Appl Music Education **
- MUSE 7402 - Hist Phil Music Ed **
- MUSE 7404 - Assessment in Music Classroom **

Electives in Music, MUSE, or Education (10 hours)

Choose one of the following (3 hours)

- MUSE 7996 - Thesis
- MUSE 7995 - Master's Project Music Ed **

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 - Biblio & Rsrch Methods

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
- MUHL 7995 - Master's Portfolio
- MUAP 7899 - Lecture Recital

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

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
- MUSE 7103 - Level II Orff-Schulwrk
- MUSE 7104 - Level III Orff Schlwrk
- MUSE 7214 - Master Class Orff Schul

Electives (9 hours)

Courses chosen from music education.

Orff Practicum (3 hours)

- MUSE 7998 - Orff Practicum

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 - Biblio & Rsrch Methods

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
- MUSE 7996 - Thesis
- MUSE 7995 - Master's Project Music Ed **

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, 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 - Biblio & Rsrch Methods

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
- MUSE 7002 - Teaching Music in Higher Edu

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

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 semestser 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 **
- MUSE 6802 - Level I Orff-Schulwerk

- MUSE 7607 - Choral Rehearsal Tech **
- MUSE 7608 - Instr Ens Rehearsl Tech **

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 master's 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 (Heptavax); measles, mumps, rubella (MMR); polio; tetanus, diptheria, pertussis (Tdap), and varicella vaccinations and/or titers if available.
    4. Freedom from tuberculosis as evidenced by a negative PPD or health provider examination.
    5. Annual flu shot 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 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 (46 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 **
- NURS 7002 - Adv Nursing Research **
- NURS 7990 - Scholarly Synthesis **

Family Nurse Practitioner Concentration Required Courses

- NURS 7000 - Theoretical Foundations **
- NURS 7003 - Adv Role Development **
- NURS 7101 - Advanced Health Assessment **
- NURS 7102 - Advanced Health Assessment, Clinical **
- NURS 7103 - Advanced Pathophysiology **
- NURS 7104 - Advanced Pharmacology **
- NURS 7601 - Family Nurse Practnr I **
- NURS 7602 - Family Nurs Prac I/Clin ** (120 clock hours)
- NURS 7603 - Family Nurs Practnr II **
- NURS 7604 - Family Nurs Pract II/CLN ** (240 clock hours)
- NURS 7605 - Family Nurs Pract III **
- NURS 7606 - Family Nurs Prac III Cln ** (120 clock hours)
- NURS 7609 - FNP Practicum ** (240 clock hours)

Family Nurse Practitioner Concentration Progression and Retention Requirements

Family Nurse Practitioner students must complete a minimum of 500 clock hours to meet the academic and practicum requirements for national certification (*NTF Criteria, 2016*).

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-Masters Certificate, who does not write a these 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 Master's 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 master's 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 (Heptavax); measles, mumps, rubella (MMR); polio; tetanus, diptheria, pertussis (Tdap), and varicella vaccinations and/or titers if available.
    4. Freedom from tuberculosis as evidenced by a negative PPD or health provider examination.
    5. Annual flu shot 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 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 **
- NURS 7002 - Adv Nursing Research **
- NURS 7990 - Scholarly Synthesis **

Executive Leadership Concentration Required Courses

- NURS 7007 - Adv Role Dev for Nurse Execs **
- NURS 7901 - Comm/Rel Bldg Nurse Exec **
- NURS 7903 - Accountability,Advocacy,Ethics **
- NURS 7303 - Health Care Finance **
- NURS 7904 - Fin/Hum Rsrcs Patient Care **
- NURS 7905 - Improving Patient Care Del **
- NURS 7907 - Evidenc-Based Ldrshp Pract **
- NURS 7908 - Healthcare Finance Practicum **
- NURS 7909 - Nurse Executive Practicum **

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 master's 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 (Heptavax); measles, mumps, rubella (MMR); polio; tetanus, diptheria, pertussis (Tdap), and varicella vaccinations and/or titers if available.
    4. Freedom from tuberculosis as evidenced by a negative PPD or health provider examination.
    5. Annual flu shot 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 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 (40 credit hours)

The MSN with a concentration in Nursing Education prepares the student as a nurse educator to teach in schools of nursing programs and in various health care system settings. Among their 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 7001 - Health Care Policy **
- NURS 7002 - Adv Nursing Research **
- NURS 7990 - Scholarly Synthesis **

Nursing Education Concentration Required Courses:

- NURS 7000 - Theoretical Foundations **
- NURS 7003 - Adv Role Development **
- NURS 7103 - Advanced Pathophysiology **
- NURS 7101 - Advanced Health Assessment **
- NURS 7102 - Advanced Health Assessment, Clinical **
- NURS 7104 - Advanced Pharmacology **
- NURS 7204 - Curriculum Design & Ed Theory **
- NURS 7205 - Evaluation Mthds in NursingEdu **
- NURS 7207 - Clinical Focus Practicum ** (120 clock hours)
- NURS 7209 - Nursing Education Practicum ** (240 clock hours)

Plus one of the following clinical focus courses:

- NURS 7505 - Advanced Adult Health Nursing **
- NURS 7525 - Ecg/Crit Care Nurses **
- NURS 7635 - Advanced Pediatric Nursing **
- NURS 7515 - Adv Psych/Mentl Health Nursing
- NURS 7545 - Adv Womens Hlth/Perinatal Nurs **

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.

Program Prerequisites

1. Prospective students must apply to both the Graduate School and the School of Health Studies, except Clinical Nutrition applicants must follow the DICAS application process See http://www.memphis.edu/shs/programs/clinical_nutrition.php). The applicant must submit an official transcript for undergraduate and graduate studies. Additionally, as part of the application to the Graduate School, an official report of Graduate Record Examination (GRE) scores must be submitted except:
    1. Environmental Nutrition (ENVN): An applicant seeking admission to the ENVN concentration is not required to submit GRE scores. However, official GRE or other standardized test scores may be requested or submitted to support an application.
2. An applicant, except in Clinical Nutrition, must also submit the following to the School: 1) SHS Graduate Admission Application Form, 2) two letters of recommendation, and 3) a 300-500 word statement of goals including identification of the intended area of concentration. (Contact the school's academic services coordinator for application forms. School application forms are also available on-line at. (www.memphis.edu/shs/students/grad_admission.php)
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:

    1. Clinical Nutrition: Completion of an undergraduate degree and an Academy of Nutrition and Dietetics (AND)-approved Didactic Program in Dietetics Verification Statement.
    2. Environmental Nutrition: life science-oriented courses such as nutrition, biology, health sciences, public health, health promotion, food service, and anthropology
    3. 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 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, 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 HS **
  and
- EDPR 7541 - Stat Meth App Ed I **
  or
- EDPR 7561 - Qualitative Mthds Educ **
  or
- PUBH 7150 - Biostatistical Methods I **

Concentration requirements:

Clinical Nutrition (23 hours):

- HPRO 7780 - Health Counseling **
- NUTR 7205 - Nutrition Care Acute/Chronic I
- NUTR 7305 - Nutrition Care Acute/ChronicII
- NUTR 7405 - Pharmacol Nutr Prof
- NUTR 7412 - Cellular Nutrition I
- NUTR 7415 - Prof Issues Nutr
- NUTR 7422 - Cellular Nutrition II
- NUTR 6010 - Management and Food Systems

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):

Clinical Nutrition:

- NUTR 7481 - Clin Intern NUTR
  and
- NUTR 7482 - Clinical Residency NUTR

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)
2. Consult Graduate School Calendar for Intent to Graduate submission deadlines - 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.

Program Prerequisites

1. Prospective students must apply to both the Graduate School and the School of Health Studies, except Clinical Nutrition applicants must follow the DICAS application process See http://www.memphis.edu/shs/programs/clinical_nutrition.php). The applicant must submit an official transcript for undergraduate and graduate studies. Additionally, as part of the application to the Graduate School, an official report of Graduate Record Examination (GRE) scores must be submitted except:
    1. Environmental Nutrition (ENVN): An applicant seeking admission to the ENVN concentration is not required to submit GRE scores. However, official GRE or other standardized test scores may be requested or submitted to support an application.
2. An applicant, except in Clinical Nutrition, must also submit the following to the School: 1) SHS Graduate Admission Application Form, 2) two letters of recommendation, and 3) a 300-500 word statement of goals including identification of the intended area of concentration. (Contact the school's academic services

coordinator for application forms. School application forms are also available on-line at. (www.memphis.edu/shs/students/grad_admission.php)

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:
    1. Clinical Nutrition: Completion of an undergraduate degree and an Academy of Nutrition and Dietetics (AND)-approved Didactic Program in Dietetics Verification Statement.
    2. Environmental Nutrition: life science-oriented courses such as nutrition, biology, health sciences, public health, health promotion, food service, and anthropology
    3. 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 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, personal goals statement, relevant employment history, and letters of recommendation.

Program Requirements

Program Research Core (6 hours):

- HMSE 7010 - Research Methods in HS **
- EDPR 7541 - Stat Meth App Ed I **

Concentration requirements:

Environmental Nutrition (21 hours):

- NUTR 7182 - Environmental Nutrition **
- NUTR 7183 - Complementary NUTR **
- NUTR 7710 - Humanitarian Nutrition **
- NUTR 7712 - Cultural Nutrition and Foods **
- NUTR 7720 - Food Policy **
- NUTR 7722 - Sustainable Food System **
- NUTR 7850 - Seminar in Environmental NUTR **

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):

Environmental Nutrition:

- NUTR 7800 - Internship in Environ NUTR **
  OR
- NUTR 7950 - Applied Project in NUTR **

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)
2. Consult Graduate School Calendar for Intent to Graduate submission deadlines - 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.

Program Prerequisites

1. Prospective students must apply to both the Graduate School and the School of Health Studies, except Clinical Nutrition applicants must follow the DICAS application process See http://www.memphis.edu/shs/programs/clinical_nutrition.php). The applicant must submit an official transcript for undergraduate and graduate studies. Additionally, as part of the application to the Graduate School, an official report of Graduate Record Examination (GRE) scores must be submitted except:
    1. Environmental Nutrition (ENVN): An applicant seeking admission to the ENVN concentration is not required to submit GRE scores. However, official GRE or other standardized test scores may be requested or submitted to support an application.
2. An applicant, except in Clinical Nutrition, must also submit the following to the School: 1) SHS Graduate Admission Application Form, 2) two letters of recommendation, and 3) a 300-500 word statement of goals including identification of the intended area of concentration. (Contact the school's academic services coordinator for application forms. School application forms are also available on-line at. (www.memphis.edu/shs/students/grad_admission.php)

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:
    1. Clinical Nutrition: Completion of an undergraduate degree and an Academy of Nutrition and Dietetics (AND)-approved Didactic Program in Dietetics Verification Statement.
    2. Environmental Nutrition: life science-oriented courses such as nutrition, biology, health sciences, public health, health promotion, food service, and anthropology
    3. 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 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, 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 HS **
  and
- EDPR 7541 - Stat Meth App Ed I **
  or
- EDPR 7561 - Qualitative Mthds Educ **
  or
- PUBH 7150 - Biostatistical Methods I **

Concentration requirements:

Nutrition Science (12 hours):

- NUTR 7152 - Problems in NUTR
- NUTR 7412 - Cellular Nutrition I
- NUTR 7422 - Cellular Nutrition II
- PUBH 7152 - Biostatistical Methods II **

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):

Nutrition Science:

- HMSE 7996 - Thesis
  or
- NUTR 7950 - Applied Project in NUTR **

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)
2. Consult Graduate School Calendar for Intent to Graduate submission deadlines - 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 5 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. Official 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. An acceptable score on the general test of the Graduate Record Examination.
4. 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.
5. Three letters of recommendation from people qualified to judge the student's ability to undertake graduate work.
6. A 10-20 page writing sample and a 1-2–page statement of purpose should be submitted to the Coordinator of Graduate Admissions in Philosophy.

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
- PHYS 7200 - Quantum Mechanics I
- PHYS 7300 - Electrodynamics
- PHYS 7520 - Statistical Mechanics
- 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
- PHYS 7386 - Methods of Theoretical Physics
- MATH 7721 - Adv Numerical Analysis

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
- PHYS 7200 - Quantum Mechanics I
- PHYS 7300 - Electrodynamics
- PHYS 7520 - Statistical Mechanics
- 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
- PHYS 7386 - Methods of Theoretical Physics
- MATH 7721 - Adv Numerical Analysis

The student must also complete:

- PHYS 7996 - Thesis 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 Diffrntl Equation I
- MATH 7321 - Modeling & Computation
- MATH 7393 - Differl Equatns/App

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
- PHYS 7200 - Quantum Mechanics I
- PHYS 7300 - Electrodynamics
- PHYS 7520 - Statistical Mechanics
- 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
- PHYS 6040 - Medical Physics
- PHYS 6050 - Astrophysics I
- PHYS 6051 - Astrophysics II
- PHYS 6110 - Nuclear and Particle Physics
- PHYS 6222 - Environmental Physics
- PHYS 6230 - Electronics

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
- PHYS 7200 - Quantum Mechanics I
- PHYS 7300 - Electrodynamics
- PHYS 7520 - Statistical Mechanics
- 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
- PHYS 6040 - Medical Physics
- PHYS 6050 - Astrophysics I
- PHYS 6051 - Astrophysics II
- PHYS 6110 - Nuclear and Particle Physics
- PHYS 6222 - Environmental Physics
- PHYS 6230 - Electronics

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

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
- PHYS 7200 - Quantum Mechanics I
- PHYS 7300 - Electrodynamics
- PHYS 7520 - Statistical Mechanics
- 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
- PHYS 6610 - Solid State Physics
- PHYS 6720 - Materials Physics
- PHYS 7390 - Polymer Physics
- MECH 7361 - Mech Bhvr Of Materials

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
- PHYS 7200 - Quantum Mechanics I
- PHYS 7300 - Electrodynamics
- PHYS 7520 - Statistical Mechanics
- 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

- PHYS 6610 - Solid State Physics
- PHYS 6720 - Materials Physics
- PHYS 7390 - Polymer Physics
- MECH 7361 - Mech Bhvr Of Materials

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

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 Envron/Issue/Ethic **
- PRST 7200 - Globalization/Profsns **
- PRST 7300 - Research Methods **
- PRST 7998 - Professional Project **
- 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 **
- LDPS 7000 - Current Issue/Leadershp
- ELPA 7560 - Small Group Leadership **

Research/Data Analysis:

- PRST 7770 - Comp Based Decsn Model **
- PRST 7600 - Statistical Analysis **

Organizational Structure and Change:

- PRST 7310 - Leadership/Organization **
- PRST 7800 - Organizational Change Skills **

Communication:

- COMM 7110 - Leadership/Communicatn
- PRST 7700 - Conflict Mgmt/Negotiatn **

Strategic Planning and Assessment:

- PRST 7105 - Project Planning & Scheduling **
- PRST 7040 - Human Resources Mgmt **

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 **
- PRST 7600 - Statistical Analysis **
- PRST 7910 - Employment & HR Law **
- PRST 7920 - Diversity in the Workplace **

Choose one:

- PRST 7500 - Foundation/Leadership **
- PRST 7310 - Leadership/Organization **

Choose two:

- PRST 7700 - Conflict Mgmt/Negotiatn **
- PRST 7930 - Compensation and Benefits **
- PRST 7940 - Recruitment,Selection,Retentio **
- PRST 7400 - Instr Dsgn Train/Develpmt **

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 **
- PRST 7420 - Org Needs Assessment **
- PRST 7400 - Instr Dsgn Train/Develpmt **
- PRST 7770 - Comp Based Decsn Model **
- PRST 7600 - Statistical Analysis **

Specialization Courses (two courses required):

- PRST 7105 - Project Planning & Scheduling **
- PRST 7440 - Engage the Adult Online Learnr **
- PRST 7450 - Computer-Based Instruction **
- PRST 7430 - Adv Instr Desgn/Train&Devel **
- PRST 7040 - Human Resources Mgmt **

- PRST 7910 - Employment & HR Law **
- PRST 7920 - Diversity in the Workplace **

Successful completion of

- PRST 7998 - Professional Project **
  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.
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

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
- PADM 7663 - Issue Public Mgmt Polcy **
- PADM 7601 - Research Methods
- PADM 7602 - Public Bdgt Adm/Fin **
- PADM 7605 - Human Resources Admin **
- PADM 7607 - Public Mgmt Leadership

- PADM 7612 - Program/Policy Evaltn
  or
- PADM 7213 - Sem Publ Pol Analysis

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 must be officially admitted into the MA program in Romance Languages first and should submit **a letter of intent**, addressed to the Chairman, Department of Foreign Languages and Literatures with a copy to the Coordinator of Graduate Studies. Applicants are encouraged to visit the department web site at

http://www.memphis.edu/fl/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 from professors who have taught the applicant.
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/fl

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. An undergraduate overall grade point average of 3.00/4.00. Applicants with an undergraduate GPA below this minimal level are admitted only if other supporting data are exceptional.
2. GRE scores (Verbal, Quantitative, and Written Analytical).

3. 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.
4. 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.
5. 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.

Program Requirements—MA Degree (30 hours)

Psychology courses (22 hours):

- PSYC 7800 - Intro School Psychology
- PSYC 7207 - Developmental Psyc
- PSYC 7802 - Child Disability/Family
- PSYC 7803 - Psych Ed Assessmnt I
- PSYC 7804 - Psych Ed Assessmnt II
- PSYC 7805 - Psych Consultation
- PSYC 7806 - Sch Psych Interventions

Education courses (15 hours):

- EDPR 7511 - Intro Ed and Psych Measurement **
- EDPR 7541 - Stat Meth App Ed I **
- LEAD 6000 - Educ/Schl/Am Society
- SPED 7000 - Intro Excptional Learnr ** (or SPED elective if a course focusing on characteristics of exceptional children course was taken at the undergraduate level)

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 **
- SPED 7000 - Intro Excptional Learnr **

- EDPR 7112 - Adolescent Development & Educ **
  or
- EDPR 7117 - Life-Span Human Dev **
  or
- ASTL 7703 - Knowledge Of Learner ** [TN eCampus]

- ICL 7030 - Assessment & Evaluation **
  or
- TELC 7002 - Assessment/Evaluation ** (TN eCampus)

Secondary Level II and III Licensure Requirements:

- LITL 7545 - Tchg Lit Subject Areas **

3 hours of appropriate methods courses

- ICL 7174 - Spec Mthds For Lang Ed **
- ICL 7303 - Eng/Lan Comp Secnd Schl **
- ICL 7502 - Teaching Mathematics Middle/Secondary Schools **
- ICL 7602 - Tchg Sci Scndry Schl **
- ICL 7652 - Tchng Soc Std Mid/Sec **
- BUED 7655 - Mat & Meth In Voc Educ

- ICL 7808 - Clinical Teaching Semester **
  and
- ICL 7993 - Professional Seminar **

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 **
- ICL 7993 - Professional Seminar **

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 - Advanced Practice with Adults and Families Concentration, (MSW)

MSW Degree Program

Program Admission and Prerequisites

A faculty committee of no less than two members will determine admission to the Master of Social Work program. The following is necessary for application:

1. A baccalaureate degree from an accredited college or university.
2. Generally a grade point average of at least 3.0 or better (A=4.0) for the final 60 semester hours or 90 quarter hours of undergraduate study is necessary for consideration.
3. Submission of GRE test scores or the Praxis – Core Academic Skills for Educators Writing Exam; admission is competitive.
4. Experience in a Social Work related field as a paid employee, volunteer or researcher is desirable.
5. A Professional Goal Statement (see the School's website for specific instructions).
6. Provide a professional resume.
7. Provide three professional references.
    1. At least one must be from a former faculty member.
    2. Two of the three must be from sources familiar with your volunteer, internship, or paid work experience

The MSW Program accepts students for Fall and Spring admissions. The deadline for fall admissions is March 1st for scholarships/assistantships considerations and April 15th for regular admission. The deadline for Spring admissions is October 15th. Applications received after April 15th and October 15th will be considered if space is available.

Program Requirements

Students are required to complete a minimum of sixty (60) semester hours; thirty (30) hours are taken in the foundation curriculum and thirty (30) hours are required in the concentration curriculum.

Thesis Option

- 30 semester hours of foundation-level graduate coursework (24 semester hours) and field (6 semester hours), 24 semester hours of concentration-level coursework (18 semester hours) and field (6 semester hours), and a minimum of 6 semester hours of SWRK 7996 - Thesis.

- 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 concentration-level coursework, elective semester hours, independent study semester hours, or thesis hours may be undertaken.
- 12 hours of concentration-level coursework and 12 hours of concentration-level field and field seminar are required courses.
- The 6 semester hours of SWRK 7996 replace 2 electives and must be taken in two consecutive semesters.
- 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.

Non-Thesis Option

- 30 semester hours of foundation-level graduate coursework (24 semester hours) and field (6 semester hours), 18 semester hours of concentration-level coursework (18 semester hours) and field (6 semester hours) and field seminar (6 semester hours).
- 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 concentration-level coursework, elective semester hours, or independent study semester hours may be undertaken.
- 12 hours of concentration-level coursework, 6 hours of concentration-level field and 6 hours of concentration-level field seminar are required courses.
- 6 semester hours of electives or independent study must be taken with the non-thesis option.
- 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.

To accommodate a wide range of student needs

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) 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 concentration 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, take the same comprehensive exam at the conclusion of the program, and meet the same requirements for graduation. Courses are offered in the traditional classroom settings, on-line and in a hybrid format (combination of traditional classroom and on-line).

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 **
- SWRK 7002 - Individuals and Families
- SWRK 7003 - Groups
- SWRK 7005 - Assessmnt,Diag,Psychopath **
- SWRK 7021 - SW Across the Lifespan **
- SWRK 7022 - Organizations and Communities
- SWRK 7030 - Social Welfare Policy/Services **
- SWRK 7051 - Field Placement I
- SWRK 7052 - Field Placement II

  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 Practice with Adults and Families

- SWRK 7018 - Adv. Individual Adults
- SWRK 7025 - Scientific Methods **
- SWRK 7026 - Evaluative Research **
- SWRK 7033 - Adv. Community Adults
- SWRK 7053 - Field Placement III **
- SWRK 7054 - Field Placement IV **
- SWRK 7055 - Integrative Field Seminar I **
- SWRK 7056 - Integrative Field Seminar II **
- Elective (3)
- Elective (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.

Program 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 Practice with Children, Youth, and Families Concentration, (MSW)

MSW Degree Program

Program Admission and Prerequisites

A faculty committee of no less than two members will determine admission to the Master of Social Work program. The following is necessary for application:

1. A baccalaureate degree from an accredited college or university.
2. Generally a grade point average of at least 3.0 or better (A=4.0) for the final 60 semester hours or 90 quarter hours of undergraduate study is necessary for consideration.
3. Submission of GRE test scores or the Praxis – Core Academic Skills for Educators Writing Exam; admission is competitive.
4. Experience in a Social Work related field as a paid employee, volunteer or researcher is desirable.
5. A Professional Goal Statement (see the School's website for specific instructions).
6. Provide a professional resume.
7. Provide three professional references.
    1. At least one must be from a former faculty member.
    2. Two of the three must be from sources familiar with your volunteer, internship, or paid work experience

The MSW Program accepts students for Fall and Spring admissions. The deadline for fall admissions is March 1st for scholarships/assistantships considerations and April 15th for regular admission. The deadline for Spring admissions is October 15th. Applications received after April 15th and October 15th will be considered if space is available.

Program Requirements

Students are required to complete a minimum of sixty (60) semester hours; thirty (30) hours are taken in the foundation curriculum and thirty (30) hours are required in the concentration curriculum.

Thesis Option

- 30 semester hours of foundation-level graduate coursework (24 semester hours) and field (6 semester hours), 24 semester hours of concentration-level coursework (18 semester hours) and field (6 semester hours), and a minimum of 6 semester hours of SWRK 7996 - Thesis.
- 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 concentration-level coursework, elective semester hours, independent study semester hours, or thesis hours may be undertaken.
- 12 hours of concentration-level coursework and 12 hours of concentration-level field and field seminar are required courses.
- The 6 semester hours of SWRK 7996 replace 2 electives and must be taken in two consecutive semesters.
- 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.

Non-Thesis Option

- 30 semester hours of foundation-level graduate coursework (24 semester hours) and field (6 semester hours), 18 semester hours of concentration-level coursework (18 semester hours) and field (6 semester hours) and field seminar (6 semester hours).
- 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 concentration-level coursework, elective semester hours, or independent study semester hours may be undertaken.
- 12 hours of concentration-level coursework, 6 hours of concentration-level field and 6 hours of concentration-level field seminar are required courses.
- 6 semester hours of electives or independent study must be taken with the non-thesis option.
- 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.

To accommodate a wide range of student needs

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) 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 concentration 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, take the same comprehensive exam at the conclusion of the program, and meet the same requirements for graduation. Courses are offered in the traditional classroom settings, on-line and in a hybrid format (combination of traditional classroom and on-line).

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 **
- SWRK 7002 - Individuals and Families
- SWRK 7003 - Groups
- SWRK 7005 - Assessmnt,Diag,Psychopath **
- SWRK 7021 - SW Across the Lifespan **
- SWRK 7022 - Organizations and Communities
- SWRK 7030 - Social Welfare Policy/Services **
- SWRK 7051 - Field Placement I
- SWRK 7052 - Field Placement II

  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 Practice with Children, Youth, and Families

- SWRK 7016 - Adv. Individual Child/Youth **
- SWRK 7032 - Adv. Community Child/Youth **
- SWRK 7025 - Scientific Methods **
- SWRK 7026 - Evaluative Research **
- SWRK 7053 - Field Placement III **
- SWRK 7054 - Field Placement IV **
- SWRK 7055 - Integrative Field Seminar I **
- SWRK 7056 - Integrative Field Seminar II **
- Elective (3)
- Elective (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.

Program 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

The Advanced Standing Program allows outstanding graduates of undergraduate social work programs to complete the MSW in a 37 credit hour accelerated program. Students seeking admission into the Advanced Standing Program must: 1) meet all admissions requirements for the 60 credit hour program; 2) have obtained a BA/BSW degree from an undergraduate program accredited by the Council on Social Work Education (CSWE) within five years of making application to the MSW or be a Licensed Baccalaureate Social Worker (LBSW); 3) have an overall undergraduate GPA of 3.0 or higher; 4) have a GPA of 3.3 or higher in their undergraduate social work courses; 5) submit test scores on the Graduate Record Exam (GRE) or Praxis Core Academic Skills for Educators Writing Exam that demonstrate graduate level proficiency in writing.

New admissions for Advanced Standing students occur for summer session only. Deadline for application is March 1st, for scholarship/assistantship consideration and April 15th for regular admissions.

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 **

- SWRK 7030 - Social Welfare Policy/Services **
- SWRK 7050 - Advanced Standing Field **
- Complete a concentration in either Advanced Practice with Children, Youth, and Families or Advanced Practice with Adults and Families.

Social Work - Non-Thesis Option, (MSW)

MSW Degree Program

Program Admission and Prerequisites

A faculty committee of no less than two members will determine admission to the Master of Social Work program. The following is necessary for application:

1. A baccalaureate degree from an accredited college or university.
2. Generally a grade point average of at least 3.0 or better (A=4.0) for the final 60 semester hours or 90 quarter hours of undergraduate study is necessary for consideration.
3. Submission of GRE test scores or the Praxis – Core Academic Skills for Educators Writing Exam; admission is competitive.
4. Experience in a Social Work related field as a paid employee, volunteer or researcher is desirable.
5. A Professional Goal Statement (see the School's website for specific instructions).
6. Provide a professional resume.
7. Provide three professional references.
    1. At least one must be from a former faculty member.
    2. Two of the three must be from sources familiar with your volunteer, internship, or paid work experience

The MSW Program accepts students for Fall and Spring admissions. The deadline for fall admissions is March 1st for scholarships/assistantships considerations and April 15th for regular admission. The deadline for Spring admissions is October 15th. Applications received after April 15th and October 15th will be considered if space is available.

Program Requirements

Students are required to complete a minimum of sixty (60) semester hours; thirty (30) hours are taken in the foundation curriculum and thirty (30) hours are required in the concentration curriculum.

Non-Thesis Option

- 30 semester hours of foundation-level graduate coursework (24 semester hours) and field (6 semester hours), 18 semester hours of concentration-level coursework (18 semester hours) and field (6 semester hours) and field seminar (6 semester hours).
- 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 concentration-level coursework, elective semester hours, or independent study semester hours may be undertaken.
- 12 hours of concentration-level coursework, 6 hours of concentration-level field and 6 hours of concentration-level field seminar are required courses.

- 6 semester hours of electives or independent study must be taken with the non-thesis option.
- 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.

To accommodate a wide range of student needs

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) 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 concentration 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, take the same comprehensive exam at the conclusion of the program, and meet the same requirements for graduation. Courses are offered in the traditional classroom settings, on-line and in a hybrid format (combination of traditional classroom and on-line).

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 **
- SWRK 7002 - Individuals and Families
- SWRK 7003 - Groups
- SWRK 7005 - Assessmnt,Diag,Psychopath **
- SWRK 7021 - SW Across the Lifespan **
- SWRK 7022 - Organizations and Communities
- SWRK 7030 - Social Welfare Policy/Services **
- SWRK 7051 - Field Placement I
- SWRK 7052 - Field Placement II

  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 Practice with Children, Youth, and Families

- SWRK 7016 - Adv. Individual Child/Youth **
- SWRK 7032 - Adv. Community Child/Youth **
- SWRK 7025 - Scientific Methods **
- SWRK 7026 - Evaluative Research **
- SWRK 7053 - Field Placement III **
- SWRK 7054 - Field Placement IV **
- SWRK 7055 - Integrative Field Seminar I **
- SWRK 7056 - Integrative Field Seminar II **
- Elective (3)
- Elective (3)

Advanced Practice with Adults and Families

- SWRK 7018 - Adv. Individual Adults
- SWRK 7025 - Scientific Methods **
- SWRK 7026 - Evaluative Research **
- SWRK 7033 - Adv. Community Adults
- SWRK 7053 - Field Placement III **
- SWRK 7054 - Field Placement IV **
- SWRK 7055 - Integrative Field Seminar I **
- SWRK 7056 - Integrative Field Seminar II **
- Elective (3)
- Elective (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.

Program 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 - Thesis Option, (MSW)

MSW Degree Program

Program Admission and Prerequisites

A faculty committee of no less than two members will determine admission to the Master of Social Work program. The following is necessary for application:

1. A baccalaureate degree from an accredited college or university.
2. Generally a grade point average of at least 3.0 or better (A=4.0) for the final 60 semester hours or 90 quarter hours of undergraduate study is necessary for consideration.
3. Submission of GRE test scores or the Praxis – Core Academic Skills for Educators Writing Exam; admission is competitive.
4. Experience in a Social Work related field as a paid employee, volunteer or researcher is desirable.
5. A Professional Goal Statement (see the School's website for specific instructions).
6. Provide a professional resume.
7. Provide three professional references.
    1. At least one must be from a former faculty member.
    2. Two of the three must be from sources familiar with your volunteer, internship, or paid work experience

The MSW Program accepts students for Fall and Spring admissions. The deadline for fall admissions is March 1st for scholarships/assistantships considerations and April 15th for regular admission. The deadline for Spring admissions is October 15th. Applications received after April 15th and October 15th will be considered if space is available.

Program Requirements

Students are required to complete a minimum of sixty (60) semester hours; thirty (30) hours are taken in the foundation curriculum and thirty (30) hours are required in the concentration curriculum.

Thesis Option

- 30 semester hours of foundation-level graduate coursework (24 semester hours) and field (6 semester hours), 24 semester hours of concentration-level coursework (18 semester hours) and field (6 semester hours), and a minimum of 6 semester hours of SWRK 7996 - Thesis.
- 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 concentration-level coursework, elective semester hours, independent study semester hours, or thesis hours may be undertaken.

- 12 hours of concentration-level coursework and 12 hours of concentration-level field and field seminar are required courses.
- The 6 semester hours of SWRK 7996 replace 2 electives and must be taken in two consecutive semesters.
- 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

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To accommodate a wide range of student needs

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) 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 concentration 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, take the same comprehensive exam at the conclusion of the program, and meet the same requirements for graduation. Courses are offered in the traditional classroom settings, on-line and in a hybrid format (combination of traditional classroom and on-line).

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 **
- SWRK 7002 - Individuals and Families
- SWRK 7003 - Groups
- SWRK 7005 - Assessmnt,Diag,Psychopath **
- SWRK 7021 - SW Across the Lifespan **
- SWRK 7022 - Organizations and Communities
- SWRK 7030 - Social Welfare Policy/Services **
- SWRK 7051 - Field Placement I
- SWRK 7052 - Field Placement II

  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 Practice with Children, Youth, and Families

- SWRK 7016 - Adv. Individual Child/Youth **
- SWRK 7032 - Adv. Community Child/Youth **
- SWRK 7025 - Scientific Methods **
- SWRK 7026 - Evaluative Research **
- SWRK 7053 - Field Placement III **
- SWRK 7054 - Field Placement IV **
- SWRK 7055 - Integrative Field Seminar I **
- SWRK 7056 - Integrative Field Seminar II **
- Elective (3)
- Elective (3)

Advanced Practice with Adults and Families

- SWRK 7018 - Adv. Individual Adults
- SWRK 7025 - Scientific Methods **
- SWRK 7026 - Evaluative Research **
- SWRK 7033 - Adv. Community Adults
- SWRK 7053 - Field Placement III **
- SWRK 7054 - Field Placement IV **
- SWRK 7055 - Integrative Field Seminar I **
- SWRK 7056 - Integrative Field Seminar II **
- Elective (3)
- Elective (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.

Program 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.

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 **

- SPED 7000 - Intro Excptional Learnr **
  or
- SPED 7001 - Test Meas Excp Chl/Adul **
  or
- PSYC 7800 - Intro School Psychology

- ICL 7105 - Lang/Comm Inclusive Classrm **
- ICL 7106 - Prof/Eth Prac Inclusive Class **

Special Education Level II and III Licensure Requirements:

- SPED 7211 - Academic Instruct Sped **
- SPED 7212 - Content Methods in Special Edu **
- SPED 7221 - Behavior Mgmt Spec Ed **

- SPED 7241 - Superv Practicm In Sped
  or
- PSYC 7808 - Psychoed Assessmnt III

- ICL 7993 - Professional Seminar **

Comprehensive (K-12) Program Requirements

- SPED 6000 - Meth/Mat Modrt/Sevr Dis
- SPED 6601 - Student Phys/Health Dis
- SPED 7042 - Fld Exp/Comprehen Sped

MAT Degree Requirements:

In addition to the above:

- EDPR 7521 - Introduction to Research Design and Methodology **
- ICL 7993 - Professional Seminar **

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 **
- SPED 7000 - Intro Excptional Learnr **
  or

- SPED 7001 - Test Meas Excp Chl/Adul **
  or
- PSYC 7800 - Intro School Psychology

- ICL 7105 - Lang/Comm Inclusive Classrm **
- ICL 7106 - Prof/Eth Prac Inclusive Class **

Special Education Level II and III Licensure Requirements:

- SPED 7211 - Academic Instruct Sped **
- SPED 7212 - Content Methods in Special Edu **
- SPED 7221 - Behavior Mgmt Spec Ed **

- SPED 7241 - Superv Practicm In Sped
  or
- PSYC 7808 - Psychoed Assessmnt III

- ICL 7993 - Professional Seminar **

Early Childhood (PreK-1) Program Requirements

- SPED 6601 - Student Phys/Health Dis
- SPED 7121 - Ed Prog Presc Ed/Disbl **
- SPED 7141 - Field Exper Early Child **

MAT Degree Requirements:

In addition to the above:

- EDPR 7521 - Introduction to Research Design and Methodology **
- ICL 7993 - Professional Seminar **

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 **
- SPED 7000 - Intro Excptional Learnr **
  or
- SPED 7001 - Test Meas Excp Chl/Adul **
  or
- PSYC 7800 - Intro School Psychology

- ICL 7105 - Lang/Comm Inclusive Classrm **
- ICL 7106 - Prof/Eth Prac Inclusive Class **

Special Education Level II and III Licensure Requirements:

- SPED 7211 - Academic Instruct Sped **
- SPED 7212 - Content Methods in Special Edu **
- SPED 7221 - Behavior Mgmt Spec Ed **

- SPED 7241 - Superv Practicm In Sped
  or
- PSYC 7808 - Psychoed Assessmnt III

- ICL 7993 - Professional Seminar **

Interventionist Licensure Program Requirements

- LITL 7553 - Literacy Dev K-4 **

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 **
- ICL 7993 - Professional Seminar **

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 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 **
- SPED 7000 - Intro Excptional Learnr **
  or

- SPED 7001 - Test Meas Excp Chl/Adul **
  or
- PSYC 7800 - Intro School Psychology

- ICL 7105 - Lang/Comm Inclusive Classrm **
- ICL 7106 - Prof/Eth Prac Inclusive Class **

Special Education Level II and III Licensure Requirements:

- SPED 7211 - Academic Instruct Sped **
- SPED 7212 - Content Methods in Special Edu **
- SPED 7221 - Behavior Mgmt Spec Ed **

- SPED 7241 - Superv Practicm In Sped
  or
- PSYC 7808 - Psychoed Assessmnt III

- ICL 7993 - Professional Seminar **

Licensure areas (choose one):

Interventionist:

- LITL 7553 - Literacy Dev K-4 **

Comprehensive (K-12):

- SPED 6000 - Meth/Mat Modrt/Sevr Dis
- SPED 6601 - Student Phys/Health Dis
- SPED 7042 - Fld Exp/Comprehen Sped

Early Childhood (PreK-1):

- SPED 6601 - Student Phys/Health Dis
- SPED 7121 - Ed Prog Presc Ed/Disbl **
- SPED 7141 - Field Exper Early Child **

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 **
- ICL 7993 - Professional Seminar **

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.

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 follow 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. Applicants should have a GPA of 3.00 (on a 4 point system). GRE scores are

required (General Test). Application instructions are available online at 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 AUSP 7200 and AUSP 7208/AUSP 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 a minimum of 3 credits of either AUSP 7990 - Special Projects or AUSP 7991 - Clinical-Research Colloquium or a combination of both. 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 written comprehensive examinations.

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.
3. Students may be dismissed for any of the following:

- 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.

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:

(Required courses are marked with *, all others are electives)

Basic Communication Processes (15 hours minimum):

- AUSP 7000 - Speech Science *
- AUSP 7002 - Sem Comm Sciences
- AUSP 7003 - Anat Phys Spch Mech *
- AUSP 7005 - Language Sample Analysis
- AUSP 7006 - Lang & Speech Devel *

- AUSP 7007 - Commun Interaction *
- AUSP 7008 - Acoustic/Percept Phonetics
- AUSP 7010 - Neurol Bases Comm *
- AUSP 7011 - Psycholinguistics
- AUSP 7016 - Sociocultrl Base Comm

Speech Disorders (6 hours minimum):

- AUSP 7201 - Clft Palate/Craniofcl Dis
- AUSP 7202 - Motor Speech Dis/Child
- AUSP 7203 - Voice Disorders
- AUSP 7204 - Disorders Phonology/Articulatn
- AUSP 7205 - Fluency Disorders
- AUSP 7206 - Developmental and Acquired Speech Motor Disorders
- AUSP 7209 - Dysphagia/Related Disor
- AUSP 7210 - Sem Speech Pathology
- AUSP 7309 - Sp Rehab/Head-Neck Path

Language Disorders (6 hours minimum):

- AUSP 7300 - Lang Dis In Children
- AUSP 7302 - Lang Disordrs/Adults I
- AUSP 7303 - Lang Disordrs/Adults II
- AUSP 7304 - Sem Lang Disorders
- AUSP 7305 - Language Learning Disabilities
- AUSP 7212 - Autism Spect Disord/Rel Disabl

Clinical Practicum (14 hours minimum):

- AUSP 7200 - Intro Clin Pract *
- AUSP 7208 - Clin Exp Spch Lang Path *

Other Courses (8 hours required):

- AUSP 7500 - Eval Resrch Comm Disord
- AUSP 7501 - Phonetic Transcript 3 Credits of Research Experience (AUSP 7990, AUSP 7996, or AUSP 7991)
- AUSP 7207 - Clinical Instrumentation (1 credit)*
- AUSP 7505 - Interprofessional Educ & Pract

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 **
- SPRT 7321 - Theoretical Foundations **

Hospitality Management Concentration Requirements (15 hours):

- HPRM 7111 - Hospitality Grad Study Seminar
- HPRM 7200 - Hospitality Studies Seminar

- HPRM 7320 - Advanced Hospitality Marketing **
- HPRM 7331 - Hospitality Services Op Mgmt **
- HPRM 7340 - Strategic Pricing & Revnue Max
- HPRM 7442 - Adv Strtg Mgmt in Hosp

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
  or
- HPRM 7911 - Hospitality Grad Internship
  or
- HPRM 7950 - Applied Project in Hospitality

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 **
- SPRT 7321 - Theoretical Foundations **

Sport Commerce Concentration Requirements:

- SPRT 7031 - Sport Finance **
- SPRT 7420 - Sport Marketing **
- SPRT 7440 - Promotions in Sport Commerce **
- SPRT 7503 - Strat Mgmt Sprt Cmrce Org **

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
  or
- SPRT 7605 - Practicum in SPRT **
  or
- SPRT 7950 - Applied Project in SPRT **

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
- THEA 7581 - Sem Drama Theory/Crit
- THEA 7582 - Analysis Dramatic Lit
- THEA 7995 - Production Practicum

Design and Technical Production Group (39 hours)

Each 2 credit course must be taken with 1-credit 7300 level.

- THEA 6511 - Automation & Mechanization
- THEA 6513 - Digital Fabrication
- THEA 6516 - Technical Direction
- THEA 6517 - Scenic Painting II
- THEA 6555 - Scenic Technology
- THEA 6556 - Lighting and Sound Technolgy
- THEA 6557 - Costume Technology I
- THEA 6592 - Thtr Arch/Facilty Plan
- THEA 7312 - Rigging Studio
- THEA 7314 - Collaborative Models for Theatre Professionals
- THEA 7315 - Prof Tech Manage Prac
- THEA 7316 - CAD for Theatre
- THEA 7317 - Production Seminar
- THEA 7546 - Visual History I
- THEA 7547 - Visual History II
- THEA 7561 - Scenic Design I
- THEA 7562 - Lighting Design I
- THEA 7563 - Costume Design I
- THEA 7565 - Costume Design II
- THEA 7566 - Sound Design I
- THEA 7567 - Scenic Design II
- THEA 7569 - Lighting Design II
- THEA 7592 - Professional Theatre Practice
- 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
- THEA 7581 - Sem Drama Theory/Crit
- THEA 7582 - Analysis Dramatic Lit
- THEA 7995 - Production Practicum

All students with a concentration in Directing must take the following courses:

- THEA 7521 - Stage Direction
- THEA 7526 - Directing Studio (1st Year Project)
  THEA 7526 - Directing Studio (2nd year Project)
- THEA 7553 - Styles Of Directing
- THEA 7554 - Seminar In Directing
- THEA 7546 - Visual History I
- THEA 7547 - Visual History II

One of the History / Literature Courses:

- THEA 6544 - Gay and Lesbian Dramatic Literature
- THEA 6548 - Musical Theatre History
- THEA 6549 - Theatre History
- THEA 6539 - Contemporary Theatre History

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
- LING 7174 - Spec Method/Lang Ed

Doctoral

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
- PHYS 8200 - Quantum Mechanics I

- PHYS 8300 - Electrodynamics
- PHYS 8520 - Statistical Mechanics
- PHYS 8386 - Methods of Theoretical Physics
- PHYS 7090 - Professional Development Workshop

Focus Area Courses:

Area 1: Solid State Materials

- PHYS 6610 - Solid State Physics
- PHYS 6720 - Materials Physics
  PHYS 8610, Advanced Device Physics

Area 2: Soft Matter

- PHYS 6020 - Soft Matter and Biological Physics
- PHYS 7390 - Polymer Physics

Area 3: Computational Physics

- PHYS 6420 - Introduction to Computational Physics
- PHYS 8385 - Methods in Computational Physics

Area 4: Astrophysics

- PHYS 6050 - Astrophysics I
- PHYS 6051 - Astrophysics II
  PHYS 8050, Advanced Methods in Astrophysics

Individual Study Course

- PHYS 7060 - Individual Study in Advanced Physics

Dissertation Course

- PHYS 9000 - Dissertation

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.

Audiology, (AuD)

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). GRE scores are required (General Test). Application instructions are available online at 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 individual research project (AUSP 8121) for a minimum of 4 hours credit.
5. All students must successfully complete an oral qualifying 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. Students may be dismissed for any of the following:
    - 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 qualifying 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 (15 Hours):

- AUSP 8001 - Psychoacoustics
- AUSP 8007 - Commun Interaction
- AUSP 8013 - Instr, Calib, & Hear Conserv
- AUSP 8019 - Anat/Phys Aud Sys I
- AUSP 8020 - Auditory Processing Across the Lifespan

Major Area Coursework (39 Hours):

- AUSP 8101 - Audiol Concepts
- AUSP 8103 - Diag/Medical Audiology
- AUSP 8105 - Vestibular Assmt/Rehab

- AUSP 8107 - Auditory Implant Technology
- AUSP 8110 - Studebaker Lectures (3 hours required)
- AUSP 8113 - Intro to Audiologic Rehab
- AUSP 8114 - Intro Hearing Aids
- AUSP 8115 - Pediatric Audiology
- AUSP 8116 - Hearing Aid Provision
- AUSP 8118 - Electrophys Assessmnt
- AUSP 8127 - Adult Audiologic Rehab & Aging
- AUSP 8128 - Evidenc-Based Pract Ampl
- AUSP 8129 - Psychosoc Adj Hrng Impr

Clinical Practicum (30 Hours):

- AUSP 8104 - Clinicl Exper Audiology (24 hours required)
- AUSP 8125 - Clinical Extrnshp Audio (6 hours required)

Other Courses (15 Hours):

- AUSP 8121 - Ind Proj Audiology (4 credits required)
- Electives (11 credits required; 6 of which must be from the list below)
    - AUSP 6205 - ASL for Speech, Audio, & Educ
    - AUSP 6206 - Deaf Culture & Deaf History
    - AUSP 7505 - Interprofessional Educ & Pract (IPE/IPP) or AUSP 8505 - Interprofessional Educ & Pract (IPE/IPP)
    - AUSP 8030 - Tinnitus Treatment and Private Practice
    - AUSP 8031 - Practice Management and Billing in Audiology

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.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).
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) 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.liaisoncas.com/applicant-ux/#/login) or to the Department Graduate Studies Coordinator (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.

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 Degree Requirements for Graduate Academic Programs) and the program requirements of the degree being pursued. The Joint Graduate Program uses an application website hosted at: https://uthsc.liaisoncas.com/applicant-ux/#/login.

ENTRANCE EXAMINATION

Applicants must have taken the ETS® GRE® revised General Test 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

All college transcripts and test score information should also be sent directly to Graduate Admissions. The programs in the academic Joint Graduate Program in Biomedical Engineering, a collaboration between the University of

Tennessee Health Science Center and the University of Memphis, require three (3) three letters of recommendation from separate evaluators attesting to qualifications for successfully undertaking graduate studies in order to consider your application complete.

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). 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. It is recommended to obtain a GRE score above 300 (combined verbal reasoning and quantitative reasoning) including a minimum 154 on the quantitative reasoning;

4. 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 at least 213/79 on the computerbased/Internetbased exam or an IELTS score of 6.5 (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

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
- BIOM 9000 - Dissertation

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 - 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 - Business Information and Technology Concentration, (PhD)

The PhD program in BIT at the University of Memphis aims at preparing students for a successful academic career as scholars. The BIT 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.

BIT 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.

BIT 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 MIS, 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 BIT 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 - 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

Business Administration - Finance Concentration, (PhD)

The required course work for the Ph.D. concentration in Finance includes corporate finance, investments, and market micro-structure 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/.

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 - 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.

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.

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.

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
- CHEM 6211 - Instrumntl Analysis
- CHEM 6311 - Physical Organic Chemistry
- CHEM 6411 - Advanced Physical Chem
- CHEM 6511 - Biochemistry I

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
- CHEM 9000 - Dissertation

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
- CHEM 8910 - Spec Prob In Chem

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
- CHEM 8911 - Advanced Presentation
- CHEM 7913 - Chemistry Seminar
- CHEM 8913 - Chemistry Seminar

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
- CHEM 8910 - Spec Prob In Chem
- CHEM 7911 - Presentation
- CHEM 8911 - Advanced Presentation
- CHEM 7913 - Chemistry Seminar
- CHEM 8913 - Chemistry Seminar
- CHEM 8001 - Directed Research
- CHEM 9000 - Dissertation

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 or AuD degree upon admission but this is not a requirement.
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
- AUSP 8021 - Prof Prep/Scientists (minimum 3 credit hours)
- AUSP 8400 - Teaching Experience (Min 1 credit hour of mentored teaching)

- AUSP 8010 - Neurol Bases Comm
  or
- AUSP 8020 - Auditory Processing Across the Lifespan

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 inthe 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.
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3. Applicants also need to submit a resume/vita describing all educational and work experience and a letter describing research interests and professional goals.
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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.
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Candidacy

After completion of all academic requirements and successful completion of the comprehensive examination, a PhD student may apply for candidacy.

Dissertation Committee

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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 inthe Graduate Catalog for each degree program.

Neuroscience Concentration

CSD Neuro Courses

- AUSP 8000 - Speech Science
- AUSP 8001 - Psychoacoustics
- AUSP 8010 - Neurol Bases Comm
- AUSP 8011 - Psycholinguistics
- AUSP 8019 - Anat/Phys Aud Sys I
- AUSP 8020 - Auditory Processing Across the Lifespan
- AUSP 8105 - Vestibular Assmt/Rehab
- AUSP 8118 - Electrophys Assessmnt
- AUSP 8212 - Autism Spect Disord/Rel Disabl
- AUSP 8112 - Sem Audiology

Other Units

- BIOM 6720 - Bioelectricity
- PSYC 827 - Functional Neuroanatomy (UTHSC)
- ANT 821 - Neuroscience Seminar (UTHSC)
- BIOL 8140 - Receptors & Signaling
- BIOL 8338 - Biological Clocks
- BIOL 8345 - Animal Communication
- BIOL 8350 - Evolutionary Ecology
- BIOL 8031 - Cell Physiology

PHD Experimental Psychology-Behavioral Neuroscience Concentration Requirements

Biological Bases of Behavior:

- PSYC 8701 - Behavioral Neuroscience
- PSYC 8705 - Neuropsychopharmacology
- PSYC 8441 - Psyc/Medical Illness

Cognitive-Affective Bases of Behavior:

- PSYC 8407 - Cognition & Emotion
- PSYC 8222 - Psychology Human Memory
- PSYC 8208 - Psyc Of Perception
- PSYC 8211 - Cognitive Processes

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 or AuD degree upon admission but this is not a requirement.
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
- AUSP 8021 - Prof Prep/Scientists (minimum 3 credit hours)
- AUSP 8400 - Teaching Experience (Min 1 credit hour of mentored teaching)

- AUSP 8010 - Neurol Bases Comm
  or
- AUSP 8020 - Auditory Processing Across the Lifespan

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 inthe 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, GRE scores, 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. GRE scores are required for every applicant.

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. 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.
4. 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.

5. 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.
6. 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.
7. 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 disseration 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.
8. 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.

Retention

At the end of every academic year, the graduate faculty in the Department of Communication evaluates the progress of every PHD student in the program. For a student to continue in the program, he or she 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 s/he 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 Graduate Committee, in conjunction with the department chair, can recommend to the CCFA Associate Dean for Graduate Affairs and the U of M Dean of the Graduate School that the student be dropped from the program. 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 may also recommend to the CCFA Associate Dean for Graduate Affairs and the U of M Dean of the Graduate School that the student be dropped from the program.

Computer Science, (PhD)

PhD Degree

Admission Requirements

1. GRE scores are required and are an important factor for admission.
2. All prerequisites must be satisfied. Students with up to two unsatisfied prerequisites may be granted admission; however, students will be required to remove such deficiencies.
3. Three letters of recommendation.
4. An undergraduate degree in an appropriate discipline with a minimum GPA of 2.5 (on a 4.0 scale) or equivalent preparation.
5. A score of at least 550 on the paper-based TOEFL, or 79 on the internet-based TOEFL, or 6 on IELTS (for students whose native language is not English).
6. A statement of purpose.

Prerequisites

1. One year (8 credit hours) of calculus and one semester (3 credit hours) of linear algebra (Students without the calculus and/or linear algebra prerequisites will be considered on an individual basis and, if admitted, must correct the deficiencies within the first semester.)
2. Satisfactory completion of the following courses (or their equivalents): COMP 1900 - CS1:Intro Comp Science, COMP 2150 - CS2: OOP and Data Structures, COMP 2700 - Discrete Structures, COMP 3410 - Computer Org/Architecture. (None of these courses may be used to fulfill degree requirements.)

Program Requirements

Coursework Requirements

1. **Graduate Credit Requirement:** Students must complete at least 72 credit hours of graduate coursework in total.
2. **Core Requirement:** Students must complete the following Core Courses: COMP 7012 - Fndtns/Software Engr, COMP 7212 - Operating/Distrib Sys, COMP 7612 - Foundations of Computing, COMP 7712 - Algorithms/Prob Solv. Students must complete the Core Courses within the first 36 hours of credit in the program, 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.
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 15 hours of Dissertation (COMP 9000) are allowed.
2. **Independent Studies Credit Limit:** At most 18 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 36 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 15 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 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, 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

15 semester hours in Discipline Specific Knowledge

15 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 and Advanced Integrative Knowledge.

6 semester hours in Counseling Psychology Foundations and Professional Issues

- CPSY 8101 - CPSY Foundations/Prfsnl Issues
- CPSY 8201 - Advocacy,Consultation,&Ethics

6 semester hours in Psychometric Theory and Methods

- CPSY 8575 - Adult Pers Assessmnt
- CPSY 8576 - Adult Cog Assessment
  or
- approved alternatives

12 semester hours in Research Methods/Data Analysis

- EDPR 8541 - Stat Meth App Ed I **
- EDPR 8542 - Stat Meth App Ed II **
- EDPR 8549 - Multivariate Meth Educ **
  or
- approved alternatives
  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.

- CPSY 8203 - Sem Coun/Coun Psy Res

18 semester hours in Counseling

- CPSY 8102 - Seminar In Grp Cpsy
- CPSY 8202 - Vocational Psychology
- CPSY 8577 - Supervisn in Coun Psyc

- COUN 8721 - Thry/Tchnqs Fam Thrpy
- COUN 8750 - Multicultural Counseling
  or
- approved alternative

- COUN 8841 - Adv Coun Thry & Tech

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 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 proposal of the dissertation project.

12 semester hours in Dissertation

NOTE: Students should familiarize themselves with the Thesis/Dissertation Preparation Guide before starting to write.

- CPSY 9000 - Dissertation

9 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.

- CPSY 8800 - Predoctoral Intrnshp

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
- COUN 8502 - Counseling Residency Research Seminar
- COUN 8510 - Counselor Supervision
- COUN 8511 - Practicum in Counseling
- COUN 8512 - Teaching Counselor Education
- COUN 8530 - Doctoral Intern Counseling
- COUN 8831 - Adv Group Processes
- COUN 8841 - Adv Coun Thry & Tech

Select from one of the following courses for Multicultural/Diversity/Social Justice Issues in Counseling:

- COUN 8700 - Spiritual Issues in Counseling
- COUN 8751 - Gender Issues In Coun
- COUN 8752 - Coun Gay/Lesbian/Bisexl
- COUN 8820-8823 - Special Topics in Counseling
- CPSY 8798 - Soc Just Coun

Fifteen (15) semester hours in research:

- EDPR 8541 - Stat Meth App Ed I **
- EDPR 8542 - Stat Meth App Ed II **
- EDPR 8561 - Qualitative Mthds Educ **
- EDPR 8511 - Intro Ed and Psych Measurement **
- CPSY 8203 - Sem Coun/Coun Psy Res

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

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.
3. A Professional Goal Statement. See program website for specific requirements.
4. A Professional Resume.
5. Three letters of reference.
6. Two years of post-MSW practice experience

Program Requirements

Students are required to complete a minimum of forty-two (48) hours.

Required Courses:

- SWRK 8040 - Advanced SW Theory **
- SWRK 8060 - Developing Fundable Proposals **
- SWRK 8050 - Writing for Publication
- SWRK 8075 - Reflective Supervision
- SWRK 8070 - Managing SW Practice I
- SWRK 8080 - Managing SW Practice II
- SWRK 8055 - Informatics & Data Driven
- PADM 8600 - Sem Adm Theory & Ethics **

  Electives (9)

Dissertation

Students are required to complete a minimum of 6 hours of dissertation.

- SWRK 9000 - Dissertation

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 Geophyics 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 7104-CERI 7702.
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 7621/8621 (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 7621, CERI 7701, CERI 7702, CERI 7703, or CERI 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 (motivation and cognitive processes and learning science), quantitative (and qualitative research methods, and program evaluation.

Since the purpose of doctoral training is to prepare students to conduct research in a specialized area, individuals with no interest in research should not apply to this major.

Program objectives are: (1) ability to contribute to the professional field through research presentations and writing; (2) preparation for careers as academicians in institutions of higher education and applied researchers in professional settings; (3) development of leadership skills for professional organizations and the ability to contribute to the field through professional service activities.

Program Admission

Applicants to the PhD program are evaluated two times a year. Completed online applications must be received by November 1 for Spring semester admission, and -March 1 for Fall admission. Applications for international students are only accepted in the Fall admission (March 1deadline). Late submissions may be considered on an individual basis, but 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, personal goals statement, writing sample, relevant employment history, and letters of recommendation. The number of students admitted to the PhD program will depend on availability of adequate faculty supervision. Admission forms are available online on the Graduate Admissions website.

The completed application must include:

- Letters of recommendation from at least three persons 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 500-1000 words indicating the applicant's present interests, career goals, research interests, prior research and relevant professional experiences.
- A writing sample, such as a previously completed university term paper or a similar expository writing from applicant's professional activity.
- A willingness to be interviewed by members of the Educational Psychology Applicants to the PhD program are evaluated two times a year. Completed online applications must be received by November 1 for Spring semester admission, and -March 1 for Fall admission. Applications for international students are only accepted in the Fall admission (March 1deadline). Late submissions may be considered on an individual basis, but 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, personal goals statement, writing sample, relevant employment history, and letters of recommendation. The number of students admitted to the PhD program will depend on availability of adequate faculty supervision. Admission forms are available online & Research faculty, should that be required.

Program Requirements

Credit Hours:

A minimum of 54 hours of graduate credit beyond the master's degree.

Core Competency:

All students upon admission into the doctoral program need to 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 (24 credits):

Research Core (15 required credits):

- EDPR 8171 - Pro Sem in Edu Psychology
- EDPR 8521 - Intro Res Design & Methodology
- EDPR 8541 - Stat Meth App Ed I **
- EDPR 8561 - Qualitative Mthds Educ **

Select one of the two following courses:

- EDPR 8542 - Stat Meth App Ed II **
- EDPR 8562 - Designing Qualitative Research **

Educational Psychology Core (9 credits required):

- EDPR 8117 - Life-Span Human Develop
- EDPR 8121 - Learning & Cognition
- EDPR 8131 - Cultural Diverse Stdnts

Program Electives (12 Credits)

These electives should be taken within the EDPR program and be planned with the major advisor.

Electives outside of Major (6 credits)

These electives are to be taken outside of EDPR and will be planned with the major advisor to focus on the area of research.

Residency Project Requirement:

All doctoral degree students are expected to be active in collaborative research with members of the faculty. This includes the research-based residency project approved by the major advisor that must result in a written research paper submitted to a refereed journal or a refereed professional conference presentation.

Comprehensive Examination:

Upon completion of coursework and residency project each doctoral student will complete a three-part open-book written comprehensive examination covering both the educational research and the educational psychology components of their program. 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 comprehensive examination are accepted as doctoral candidates.

Dissertation and Final Defense (12 credits):

A dissertation acceptable to the faculty is a requirement 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 facts and phenomena revealed by the research. 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

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).

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 beyond the masters degree (see Table 1A). Students entering with a bachelors degree can apply up to 24 semester hours of dissertation credit toward these requirements. Students entering with a masters degree can apply up to 18 hours of dissertation credit. 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	Course Hours (excluding Dissertation)	Hours of Dissertation (9000 course)
Post Bachelor's Degree (BS)	72	48	24
Post Master's Degree (MS)	42	24	18

Table 1B) Doctoral Program Course Hours

Option	Course Hours (excluding dissertation)	Maximum hours of dissertation (9000 courses)	Maximum hours at 6000	Minimum hours at 7000/8000	Minimum hours at 7000/8000 in concentration
Post Bachelor's Degree (BS)	48	24	12	36	24
Post Master's Degree (MS)	24	18	6	18	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
- CIVL 8012 - Prob Meth In Engr **

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).

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 beyond the masters degree (see Table 1A). Students entering with a bachelors degree can apply up to 24 semester hours of

dissertation credit toward these requirements. Students entering with a masters degree can apply up to 18 hours of dissertation credit. 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**	**Course Hours (excluding Dissertation)**	**Hours of Dissertation (9000 course)**
Post Bachelor's Degree (BS)	72	48	24
Post Master's Degree (MS)	42	24	18

Table 1B) Doctoral Program Course Hours

Option	**Course Hours (excluding dissertation)**	**Maximum hours of dissertation (9000 courses)**	**Maximum hours at 6000**	**Minimum hours at 7000/8000**	**Minimum hours at 7000/8000 in concentration**
Post Bachelor's Degree (BS)	48	24	12	36	24
Post Master's Degree (MS)	24	18	6	18	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 Develpmnt

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).

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 beyond the masters degree (see Table 1A). Students entering with a bachelors degree can apply up to 24 semester hours of dissertation credit toward these requirements. Students entering with a masters degree can apply up to 18 hours of dissertation credit. 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	Course Hours (excluding Dissertation)	Hours of Dissertation (9000 course)
Post Bachelor's Degree (BS)	72	48	24
Post Master's Degree (MS)	42	24	18

Table 1B) Doctoral Program Course Hours

Option	Course Hours (excluding dissertation)	Maximum hours of dissertation (9000 courses)	Maximum hours at 6000	Minimum hours at 7000/8000	Minimum hours at 7000/8000 in concentration

Post Bachelor's Degree (BS)	48	24	12	36	24
Post Master's Degree (MS)	24	18	6	18	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 Develpmnt

Engineering - Engineering Physics 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).

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 beyond the masters degree (see Table 1A). Students entering with a bachelors degree can apply up to 24 semester hours of dissertation credit toward these requirements. Students entering with a masters degree can apply up to 18 hours of dissertation credit. 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	Course Hours (excluding Dissertation)	Hours of Dissertation (9000 course)
Post Bachelor's Degree (BS)	72	48	24
Post Master's Degree (MS)	42	24	18

Table 1B) Doctoral Program Course Hours

Option	Course Hours (excluding dissertation)	Maximum hours of dissertation (9000 courses)	Maximum hours at 6000	Minimum hours at 7000/8000	Minimum hours at 7000/8000 in concentration
Post Bachelor's Degree (BS)	48	24	12	36	24
Post Master's Degree (MS)	24	18	6	18	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

For the Engineering Physics concentration, 15 hours in Engineering courses for post-BS and 9 hours in Engineering courses for post-MS candidates are required. Similarly, 24 hours in Physics for post-BS and 9 hours in Physics for post-MS are required. The graduate committee which will be a composition of College of Engineering faculty and Physics Department faculty and this committee will determine the specific Physics and Engineering courses for this proposed concentration to effectively assist the graduate student's academic and research experiences.

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).

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 beyond the masters degree (see Table 1A). Students entering with a bachelors degree can apply up to 24 semester hours of dissertation credit toward these requirements. Students entering with a masters degree can apply up to 18 hours of dissertation credit. 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**	**Course Hours (excluding Dissertation)**	**Hours of Dissertation (9000 course)**
Post Bachelor's Degree (BS)	72	48	24
Post Master's Degree (MS)	42	24	18

Table 1B) Doctoral Program Course Hours

Option	**Course Hours (excluding dissertation)**	**Maximum hours of dissertation (9000 courses)**	**Maximum hours at 6000**	**Minimum hours at 7000/8000**	**Minimum hours at 7000/8000 in concentration**
Post Bachelor's Degree (BS)	48	24	12	36	24
Post Master's Degree (MS)	24	18	6	18	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 Analys I
- MECH 8342 - Engineering Analys II

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 (Currently Textual Rhetorics)
- ENGL 8805 - Foundations of Writing Studies
- ENGL 8806 - Resch Meth In Writing
- ENGL 8350 - Rhetorical Theory

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
- ENGL 8511 - Survey of Linguistics
- ENGL 8531 - Theory/History ESL **
- ENGL 8590 - Appl/Theory Linguistics
- 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

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. There will be three written comprehensive exams and one oral exam.

To allow time to study for the exams, students should take their first written exam within two semesters after completing all Ph.D. coursework (including the foreign language requirements). Students could then take one exam per week over three weeks. A student will have a maximum of two months to complete all of the comprehensive exams.

1. One four-hour proctored written exam will cover the Ph.D. student's concentration. The objective of this exam is to demonstrate that the student has a command of 75-100 seminal texts, in his or her concentration, that are not included in the reading list for exam #. This list will be determined by each committee.
2. A second proctored four-hour written exam will allow students to demonstrate that they have enough background / reading knowledge to qualify them to teach upper division and graduate courses in the student's chosen area of specialization within the concentration. This area will be determined by the student in conjunction with his or her committee. The student will develop the reading list in conjunction with his or her committee, and the reading list for this portion of this exam will consist of between 50-75 texts.

3. A third written take-home exam will consist of 3,500-5,000 words that demonstrate the student's command of his or her knowledge of his or her proposed dissertation area. The objective of this exam is for the student to demonstrate that he or she has enough background / reading knowledge and ability to write a sophisticated essay concerning a literature review of the student's prospective dissertation area. This essay will cite at least 20-25 texts. The take-home exam should take no more than 7 days to complete.
4. After the written exams have been completed and graded, there will be a two-hour oral exam based upon the written exams.

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.

Research Proposal

When the student has passed the comprehensive examinations and has done extensive preliminary research, he or she must present and defend a research proposal before the advisory committee. That defense will be open to the entire academic community. The student must give a copy of the proposal to all committee members at least two weeks before the scheduled meeting. The advisory committee must approve the proposal 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, (PhD)

Doctor of Philosophy (PhD) Program

Xinhua Yu, MS, MD, PhD
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The School of Public Health at The University of Memphis offers a PhD degree in Epidemiology, 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
- PUBH 8170 - Epidemiology in PUBH

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, 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
- PUBH 8172 - Epidemiology PUBH II
- PUBH 8174 - Epidemiology PUBH III

Biostatistics Core: 15 credit hours

- PUBH 8152 - Biostatistical Methods II
- PUBH 8310 - Mixed Model Regression Analys
- PUBH 8311 - Appl Categorical Data Analys **
- PUBH 8309 - Appl Surv Analys in Pub Hlth
- PUBH 8190 - Adv SAS for PUBH Prof 1

Doctoral Seminar: 9 credit hours

- PUBH 8901 - Doctoral Professional Dev Sem
- PUBH 8192 - Intro to Human Disease for PH
- PUBH 8720 - Grant Writing in HealthScience **

Epidemiology Electives: 15 credit hours

A total of fifteen (15) credit hours is required, example courses are:

Public Health Electives:

- PUBH 8124 - Environmental Toxicology
- PUBH 8442 - Cancer Epidemiology
- PUBH 8443 - Infectious Disease Epidemiolgy
- PUBH 8140 - Epidemiology Chronic Disease
- PUBH 8445 - Genetic Epidemiology
- PUBH 8450 - Randomized Clinical Trials I

Dissertation: 15 credit hours

- PUBH 9000 - Dissertation

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?

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Health Systems and Policy, (PhD)

Doctor of Philosophy (PhD)

SangNam Ahn, PhD, MPSA

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The PhD degree in Health Systems and Policy (HSP) is the highest academic degree for individuals planning to pursue scholarly careers in this discipline. The HSP PhD is designed for those who want to teach and conduct research utilizing evidence-based best practices and rigorous scientific theories and methods to understand and improve the structure, process, and outcomes of health systems, as well as the transformative nature of healthcare data and evidence; and the need to address health systems issues within the context of improving population health. Graduates of the program will be prepared to conduct innovative, interdisciplinary, and translational research and a variety of academic, government, and non-profit health settings.

Program Admission

A master's degree in a public health, health services administration, health policy or other related health field is required for admission. Applicants for the doctoral program 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) from the past five years is required. Applicants already holding a doctoral degree or its professional equivalent from a U.S. university 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 in medicine, dentistry, management, or law earned in the U.S.

All international applicants who will be attending the University on a visa, are non-native English speakers, and are not University of Memphis graduates 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 professionals (at least two letters from former professors) familiar with the applicant's academic background or experience in public health related work, 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 Health Systems and Policy will prepare the candidate to achieve these goals.

Materials submitted will be reviewed by the faculty admissions committee. Admission decisions are based upon the overall quality of the applicant's scholarship and academic ability (i.e., 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.

Students are usually admitted to the HSP PhD program for the fall semester. The priority application deadline is December 1, guaranteed consideration deadline is February 1, and final application deadline is April 1.

Program Requirements

Credit Hours:

A minimum of 54 semester hours of graduate credit beyond the master's degree is required for the PhD in Health Systems and Policy. 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 Health Systems Management and Policy. 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 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.

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 and health systems and policy applied to public health, health services and policy, and dissertation topic. The student's advisory committee will be responsible for organizing and evaluating the comprehensive examination.

Dissertation:

To fulfill the requirements for the PhD in Health Systems and Policy, 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 will be accepted as part of the last 30 hours.

Program Curriculum

Curriculum Requirements:

The HSP doctoral program is a 54 semester hour degree program. Students are required to fulfill prerequisite courses PUBH 8150 - Biostatistical Methods I, PUBH 8170 - Epidemiology in PUBH, and HADM 8105 - Health Policy and the Organization of Health Services, or document their equivalent. Credit hours for these prerequisite courses will not count toward the 54 hours required for graduation.

Health Systems and Policy Core

The following are required courses:

- PUBH 8710 - HealthCare Economics
- HADM 8204 - Quality/Outcome Mgmt Hlth Care
- PUBH 8502 - Hlth Policy, Theory & Methods
- HADM 8109 - Health Information Systems
- HADM 8110 - Leadershp/Org Chg in Hlth Care

Research Methods Core

- HADM 8106 - Health Services Resrch
  and two (2) of the following courses for a total of nine (9) credit hours:
- PUBH 8334 - Comm Based Part Resrch Mthds
- PUBH 8172 - Epidemiology PUBH II
- PUBH 8174 - Epidemiology PUBH III
- PUBH 8141 - Epidemiologic Survey Method
- PUBH 8444 - PUBH Surveillance Fundamentals
- PUBH 8450 - Randomized Clinical Trials I

- PUBH 8347 - Qualitative Mtds Hlth Research
- PUBH 8339 - Transl Rsrch Meth Pop Hlth

Biostatistics Core

- PUBH 8152 - Biostatistical Methods II

and two (2) of the following courses for a total of nine (9) credit hours:

- PSYC 8301 - Research Design & Meth
- PSYC 8302 - Adv Statistics Psych I
- PSYC 8304 - Meas Th & Psychomet
- PSYC 8305 - Quant Meth Review Rsch
- PUBH 8104 - Large Data Sets/PUBH Research
- PUBH 8306 - Linear Struct Modeling
- PUBH 8308 - Appl Multivariate Stat
- PUBH 8310 - Mixed Model Regression Analys
- PUBH 8311 - Appl Categorical Data Analys **

Elective Courses

Students will choose up to 9 credit hours of faculty-guided electives.

Doctoral Seminar

- PUBH 8901 - Doctoral Professional Dev Sem

Dissertation

up to nine (9) credit hours

- PUBH 9000 - Dissertation

HSP 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 HSP PhD Program curriculum and degree requirements?

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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 **
- LEAD 8001 - Educ Ldrship In Orgntns **
- LEAD 8003 - Policy-Oriented Rsrch **
- HIAD 8403 - Rsrch Hghr/Adult Educ **
- HIAD 8541 - Issues/Trends Tchg Adults **
- EDPR 8541 - Stat Meth App Ed I **
- EDPR 8561 - Qualitative Mthds Educ **
- EDPR 8542 - Stat Meth App Ed II ** or EDPR 8565 - Qual Methods and Analysis **

Higher Education Concentration Courses (21 hours)

- HIAD 8401 - Higher Educ Adminstratn **
- HIAD 8410 - Overview Higher Edu **
- HIAD 8412 - Hist/Policy Persp Hied
- HIAD 8420 - Legal/Ethical Issues in HIAD **

- HIAD 8422 - Higher Educ Finance **
  6 elective hours approved by the student's advisor

Adult Education Concentration Courses (21 hours):

- HIAD 8510 - Overview of Adult Educ **
- HIAD 8530 - Continuing Prof Educ **
- HIAD 8542 - Global/Compartv Issues Ldrshp **
- HIAD 8415 - IT Trends & Issues **
- LEAD 7100 - Education & Community **
  6 elective hours approved by the student's advisor

History - Concentration in Ancient Egyptian History, (PhD)

PhD Degree Program

The Department of History also offers a program of study built upon the MA degree 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.

In most cases, you will need 24 graduate hours in history with at least a 3.25 GPA (on a 4.0 scale) from an accredited institution, or a MA in a related field that we judge as sufficient preparation for our PhD program. We strongly recommend an MA in history.

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
- HIST 7011 - Phil & Theory of History
- HIST 8011 - Phil & Theory of History
- HIST 7100 - Global Historiography
- HIST 8100 - Global Historiography

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

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 also offers a program of study built upon the MA degree 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.

In most cases, you will need 24 graduate hours in history with at least a 3.25 GPA (on a 4.0 scale) from an accredited institution, or a MA in a related field that we judge as sufficient preparation for our PhD program. We strongly recommend an MA in history.

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
- HIST 7011 - Phil & Theory of History
- HIST 8011 - Phil & Theory of History
- HIST 7100 - Global Historiography
- HIST 8100 - Global Historiography

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

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 - 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) 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) 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 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) 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 - 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) 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) 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.

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 **
- LEAD 8002 - Am Society & Ed Policy **
- LEAD 8003 - Policy-Oriented Rsrch **
- LEAD 8070 - Culminating Experience
- LDPS 8155 - Seminar in Ed Law **
- LDPS 8320 - Urb Ed: Hst Cntmp Persp **
- LDPS 8330 - Race/Ethn/Gndr/Amer Ed **
- EDPR 8541 - Stat Meth App Ed I **
- EDPR 8561 - Qualitative Mthds Educ **
- EDPR 8542 - Stat Meth App Ed II **
  or
- EDPR 8565 - Qual Methods and Analysis **

Educational Leadership Concentration Requirements:

- LEAD 8140 - Planning Ed Change
- LDPS 8115 - Educ Ldrshp Sem
- LDPS 8121 - Personnel Admin
- LDPS 8132 - School Finance
  3 hour elective course

Dissertation (9 hours)

- LEAD 9000 - Dissertation **

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 Ldrship In Orgntns **
- LEAD 8002 - Am Society & Ed Policy **
- LEAD 8003 - Policy-Oriented Rsrch **
- LEAD 8070 - Culminating Experience
- LDPS 8155 - Seminar in Ed Law **
- LDPS 8320 - Urb Ed: Hst Cntmp Persp **
- LDPS 8330 - Race/Ethn/Gndr/Amer Ed **
- EDPR 8541 - Stat Meth App Ed I **
- EDPR 8561 - Qualitative Mthds Educ **
- EDPR 8542 - Stat Meth App Ed II **
  or
- EDPR 8565 - Qual Methods and Analysis **

Policy Studies Concentration Requirements:

- LDPS 8133 - Econ of Education
- LDPS 8180 - Pltcs & Pwr Ed Ldrshp
- LDPS 8181 - Plcy Implmntn Ed Ldrshp
- LDPS 8310 - Phil Anly & Educ Plcy
  3 hour elective

Dissertation (9 hours)

- LEAD 9000 - Dissertation **

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 **
- LEAD 8002 - Am Society & Ed Policy **
- LEAD 8003 - Policy-Oriented Rsrch **
- LEAD 8070 - Culminating Experience
- LDPS 8155 - Seminar in Ed Law **
- LDPS 8320 - Urb Ed: Hst Cntmp Persp **
- LDPS 8330 - Race/Ethn/Gndr/Amer Ed **
- EDPR 8541 - Stat Meth App Ed I **
- EDPR 8561 - Qualitative Mthds Educ **
- EDPR 8542 - Stat Meth App Ed II **
  or
- EDPR 8565 - Qual Methods and Analysis **

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.
- **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.
  - 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
    - Potential stakeholders
    - Impact within the community (For example; cultural, environmental, 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 weeks prior to the scheduled defense date.
- 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.
- 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.

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
- MATH 7262 - Algebraic Theory II
- MATH 7350 - Real Variables I
- MATH 7351 - Real Variables II
  Additional requirements can be found by visiting the following webpage: 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 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

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

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 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

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 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
- MUSE 8606 - Desc/Exp Research Music
- EDPR 8541 - Stat Meth App Ed I **
- EDPR 8542 - Stat Meth App Ed II **
- EDPR 8561 - Qualitative Mthds Educ **

Music and/or MUSE electives (18 hours)

Minor (18 hours)

Dissertation (9 hours)

- MUSE 9000 - Dissertation

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 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 - Erly Musical Notation
- MUHL 8505 - Seminar Musicology

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 - Fld Mthd In Ethnmsclgy
  OR
- MUHL 8800 - Fld Mthd In Ethnmsclgy

- MUHL 8801 - Ethnomusicology
- MUHL 8805 - Trnscrpt/Anly Etnmsclgy
- MUHL 8806 - Sem Southern Reg Music

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 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, 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. Lin Zhan
Dean and Professor
lzhan@memphis.edu

Dr. Annapoorna Mary, MSc(N), PhD, RN, CNE
Director, PhD Program, Associate Professor
amary@memphis.edu

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 **

- NURS 8112 - Middle-Range Theories in Nsg **

Research Core: 18 credit hours

- NURS 8311 - Doctoral Research Seminar II **
- NURS 8312 - Doctoral Research Seminar II **
- NURS 8313 - Resp. Conduct of Research **
- NURS 8314 - Doctoral Research Practicum **
- NURS 8211 - Qualitative Methods **
- NURS 8213 - Quantitative Methods **
- PUBH 7150 - Biostatistical Methods I **

Education Core: 6 credit hours

- EDPR 8541 - Stat Meth App Ed I **
- ICL 8003 - Curric Design/Evalatn

Health Equity Core: 6 credit hours

- NURS 8113 - Health Equity Research **
- PUBH 7160 - Soc/Behav Science Principles **

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 **
- ICL 7030 - Assessment & Evaluation **
- EDPR 7561 - Qualitative Mthds Educ **
- EDPR 7521 - Introduction to Research Design and Methodology **
- HIAD 8410 - Overview Higher Edu **
- HIAD 8420 - Legal/Ethical Issues in HIAD **
- LEAD 7000 - Intro To Educ Ldrshp **
- EDPR 7121 - Learning & Cognition **
- ICL 8004 - Innovative Curricula
- ICL 8054 - Creativity Tchg/Curric

Research Focus Electives:

- HIAD 8403 - Rsrch Hghr/Adult Educ **
- HIAD 8406 - Designing Research in HIAD

- PSYC 8309 - Focus Group Research
- PSYC 8312 - Qualitative Resrch/Psyc
- EDPR 7512 - Psychomet Thry/Ed Appl
- EDPR 8511 - Intro Ed and Psych Measurement **
- PUBH 8311 - Appl Categorical Data Analys **
- ICL 8953 - Writing for Academic Publicatn
- EDPR 8547 - Survey Research: Sampling Design and Analysis **

Health Equity Focus Electives:

- PUBH 8130 - Social Determinants of Health
- HADM 7204 - Healthcare Qual & Outcms Mgmt **
- HADM 7107 - Health Care Ethics

Dissertation: 12 credit hours

- NURS 9000 - Doctoral Dissertation

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. Eric Bailey
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Dr. Annapoorna Mary, MSc(N), PhD, RN, CNE
Director, PhD Program, Associate Professor
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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 5 cannot be guaranteed consideration for an assistantship for the upcoming academic year.

1. Fulfillment of university requirements for admission to the Graduate School, including a score on the GRE acceptable to the department.
2. 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).
3. Three letters of recommendation, to be submitted by persons competent to judge the prospective student's ability to undertake graduate work. (These letters are to be sent directly from the referee to the department's coordinator of graduate admissions).
4. Transcripts of prior academic work. Official 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.
5. A 10-20 page writing sample and a 1-2–page statement of purpose should be submitted to the Coordinator of Graduate Admissions in Philosophy.

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).
2. 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

1. 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.
2. 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.
3. 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.
4. 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 5 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 Departmental application form and completed University application form.
2. A grade point average of at least 2.75/4.0 in all undergraduate course work. Applicants with undergraduate records at this minimum level are not ordinarily admitted. 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 (Verbal, Quantitative, and Written Analytical).
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 1200 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.

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
- PSYC 8301 - Research Design & Meth

- PSYC 7302 - Adv Statistics Psych I
- PSYC 8302 - Adv Statistics Psych I

- PSYC 7303 - Adv Statistics Psych II
- PSYC 8303 - Adv Statistics Psych II

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
- PSYC 8303 - Adv Statistics Psych II

- PSYC 7304 - Meas Th & Psychomet
- PSYC 8304 - Meas Th & Psychomet

- PSYC 7305 - Quant Meth Review Rsch
- PSYC 8305 - Quant Meth Review Rsch

- PSYC 7306 - Linear Struct Modeling
- PSYC 8306 - Linear Struct Modeling

- PSYC 7307 - Models Program Eval
- PSYC 8307 - Models Program Eval

- PSYC 7308 - Appl Multivariate Stat
- PSYC 8308 - Appl Multivariate Stat

- PSYC 7310 - Mixed-Model Regress Anly

- PSYC 8310 - Mixed-Model Regress Anly

- PSYC 7311 - Appl Cat Data Analysis
- PSYC 8311 - Appl Cat Data Analysis

- PSYC 7312 - Qualitative Resrch/Psyc
- PSYC 8312 - Qualitative Resrch/Psyc

Must complete at least one course in each of the following areas

All MS/PhD students 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.

Biological Bases of Behavior:

- PSYC 7441 - Psyc/Medical Illness
- PSYC 8441 - Psyc/Medical Illness

- PSYC 7701 - Behavioral Neuroscience
- PSYC 8701 - Behavioral Neuroscience

- PSYC 7705 - Neuropsychopharmacology
- PSYC 8705 - Neuropsychopharmacology

Cognitive-Affective Bases of Behavior:

- PSYC 7208 - Psyc Of Perception
- PSYC 8208 - Psyc Of Perception

- PSYC 7211 - Cognitive Processes
- PSYC 8211 - Cognitive Processes

- PSYC 7222 - Psychology Human Memory
- PSYC 8222 - Psychology Human Memory

- PSYC 7407 - Cognition & Emotion
- PSYC 8407 - Cognition & Emotion

Social Bases of Behavior:

- PSYC 7215 - Organizational Psyc
- PSYC 8215 - Organizational Psyc

- PSYC 7217 - Social Psychology
- PSYC 8217 - Social Psychology

- PSYC 7219 - Soc/Persnlty Devel
- PSYC 8219 - Soc/Persnlty Devel

- PSYC 7220 - Social Cognition
- PSYC 8220 - Social Cognition

Individual Bases of Behavior:

- PSYC 7207 - Developmental Psyc
- PSYC 8207 - Developmental Psyc

- PSYC 7219 - Soc/Persnlty Devel
- PSYC 8219 - Soc/Persnlty Devel

- PSYC 7412 - Psychopathology
- PSYC 8412 - Psychopathology

- PSYC 7416 - Child Psychopathology
- PSYC 8416 - Child Psychopathology

- PSYC 7420 - Personal Construct Thry
- PSYC 8420 - Personal Construct Thry

- PSYC 7516 - Issues Psychothrpy Rsch
- PSYC 8516 - Issues Psychothrpy Rsch

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

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
- PSYC 8207 - Developmental Psyc

- PSYC 7217 - Social Psychology
- PSYC 8217 - Social Psychology

- PSYC 7407 - Cognition & Emotion
- PSYC 8407 - Cognition & Emotion

- PSYC 7412 - Psychopathology
- PSYC 8412 - Psychopathology

- PSYC 7428 - Foundatns Clinical Psyc
- PSYC 8428 - Foundatns Clinical Psyc

- PSYC 7430 - Clin Assessment/Ability
- PSYC 8430 - Clin Assessment/Ability

- PSYC 7432 - Clinic Asses/Case Cncpt
- PSYC 8432 - Clinic Asses/Case Cncpt

- PSYC 7435 - Intro To Psychotherapy
- PSYC 8435 - Intro To Psychotherapy

- PSYC 7705 - Neuropsychopharmacology
- PSYC 8705 - Neuropsychopharmacology

- PSYC 8707 - Professional Issues

- PSYC 7434 - Clin Psychotherapies
- PSYC 8434 - Clin Psychotherapies

- PSYC 7438 - Pract Clinical Trtmt
- PSYC 8438 - Pract Clinical Trtmt

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
- PSYC 8440 - Behavioral Medicine I

- PSYC 7441 - Psyc/Medical Illness
- PSYC 8441 - Psyc/Medical Illness

- PSYC 7434 - Clin Psychotherapies
- PSYC 8434 - Clin Psychotherapies

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
- PSYC 8416 - Child Psychopathology

- PSYC 7434 - Clin Psychotherapies
- PSYC 8434 - Clin Psychotherapies

- PSYC 7207 - Developmental Psyc
- PSYC 8207 - Developmental Psyc

- PSYC 7219 - Soc/Persnlty Devel
- PSYC 8219 - Soc/Persnlty Devel

- PSYC 7701 - Behavioral Neuroscience
- PSYC 8701 - Behavioral Neuroscience

- PSYC 7705 - Neuropsychopharmacology
- PSYC 8705 - Neuropsychopharmacology

- PSYC 7808 - Psychoed Assessmnt III
- PSYC 8808 - Psychoed Assessment III

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 Psychothrpy Rsch
- PSYC 8516 - Issues Psychothrpy Rsch

- PSYC 7438 - Pract Clinical Trtmt
- PSYC 8438 - Pract Clinical Trtmt

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 5 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 Departmental application form and completed University application form.
2. A grade point average of at least 2.75/4.0 in all undergraduate course work. Applicants with undergraduate records at this minimum level are not ordinarily admitted. 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 (Verbal, Quantitative, and Written Analytical).
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 1200 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.

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
- PSYC 8301 - Research Design & Meth

- PSYC 7302 - Adv Statistics Psych I
- PSYC 8302 - Adv Statistics Psych I

- PSYC 7303 - Adv Statistics Psych II
- PSYC 8303 - Adv Statistics Psych II

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
- PSYC 8303 - Adv Statistics Psych II

- PSYC 7304 - Meas Th & Psychomet
- PSYC 8304 - Meas Th & Psychomet

- PSYC 7305 - Quant Meth Review Rsch
- PSYC 8305 - Quant Meth Review Rsch

- PSYC 7306 - Linear Struct Modeling
- PSYC 8306 - Linear Struct Modeling

- PSYC 7307 - Models Program Eval
- PSYC 8307 - Models Program Eval

- PSYC 7308 - Appl Multivariate Stat
- PSYC 8308 - Appl Multivariate Stat

- PSYC 7310 - Mixed-Model Regress Anly
- PSYC 8310 - Mixed-Model Regress Anly

- PSYC 7311 - Appl Cat Data Analysis
- PSYC 8311 - Appl Cat Data Analysis

- PSYC 7312 - Qualitative Resrch/Psyc
- PSYC 8312 - Qualitative Resrch/Psyc

Must complete at least one course in each of the following areas

All MS/PhD students 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.

Biological Bases of Behavior:

- PSYC 7441 - Psyc/Medical Illness
- PSYC 8441 - Psyc/Medical Illness

- PSYC 7701 - Behavioral Neuroscience
- PSYC 8701 - Behavioral Neuroscience

- PSYC 7705 - Neuropsychopharmacology
- PSYC 8705 - Neuropsychopharmacology

Cognitive-Affective Bases of Behavior:

- PSYC 7208 - Psyc Of Perception
- PSYC 8208 - Psyc Of Perception

- PSYC 7211 - Cognitive Processes
- PSYC 8211 - Cognitive Processes

- PSYC 7222 - Psychology Human Memory
- PSYC 8222 - Psychology Human Memory

- PSYC 7407 - Cognition & Emotion
- PSYC 8407 - Cognition & Emotion

Social Bases of Behavior:

- PSYC 7215 - Organizational Psyc
- PSYC 8215 - Organizational Psyc

- PSYC 7217 - Social Psychology
- PSYC 8217 - Social Psychology

- PSYC 7219 - Soc/Persnlty Devel
- PSYC 8219 - Soc/Persnlty Devel

- PSYC 7220 - Social Cognition
- PSYC 8220 - Social Cognition

Individual Bases of Behavior:

- PSYC 7207 - Developmental Psyc
- PSYC 8207 - Developmental Psyc

- PSYC 7219 - Soc/Persnlty Devel
- PSYC 8219 - Soc/Persnlty Devel

- PSYC 7412 - Psychopathology
- PSYC 8412 - Psychopathology

- PSYC 7416 - Child Psychopathology
- PSYC 8416 - Child Psychopathology

- PSYC 7420 - Personal Construct Thry
- PSYC 8420 - Personal Construct Thry

- PSYC 7516 - Issues Psychothrpy Rsch
- PSYC 8516 - Issues Psychothrpy Rsch

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

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 5 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 Departmental application form and completed University application form.
2. A grade point average of at least 2.75/4.0 in all undergraduate course work. Applicants with undergraduate records at this minimum level are not ordinarily admitted. 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 (Verbal, Quantitative, and Written Analytical).
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.

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.

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- PSYC 7207 - Developmental Psyc
- PSYC 8207 - Developmental Psyc

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- PSYC 8219 - Soc/Persnlty Devel

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- PSYC 8412 - Psychopathology

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- PSYC 8420 - Personal Construct Thry

- PSYC 7516 - Issues Psychothrpy Rsch
- PSYC 8516 - Issues Psychothrpy Rsch

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

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
- PSYC 8416 - Child Psychopathology

- PSYC 7800 - Intro School Psychology
- PSYC 8800 - Intro School Psychology

- PSYC 7802 - Child Disability/Family
- PSYC 8802 - Child Disability/Family

- PSYC 7803 - Psych Ed Assessmnt I
- PSYC 8803 - Psych Ed Assessmnt I

- PSYC 7804 - Psych Ed Assessmnt II
- PSYC 8804 - Psych Ed Assessmnt II

- PSYC 7805 - Psych Consultation
- PSYC 8805 - Psych Consultation

- PSYC 7806 - Sch Psych Interventions

- PSYC 8806 - Sch Psych Interventions

- LEAD 6000 - Educ/Schl/Am Society

- SPED 7000 - Intro Excptional Learnr **
- SPED 8000

- LITL 7542 - Alt Proced Reading Prob
- LITL 8542 - Alt Proced Reading Prob

- COUN 7750 - Multicultural Counseling
- COUN 8750 - Multicultural Counseling
  or
- PSYC 7434 - Clin Psychotherapies
- PSYC 8434 - Clin Psychotherapies

Subspecialization:

Students must complete up to 12 hours of elective courses in an area of subspecialization determined in consultation with the major professor.

Practica:

Students must complete PSYC 7614/PSYC 8614 (6 hours) and PSYC 8809 (6 hours) while in practicum placements.

- PSYC 7614 - Prac School Psyc
- PSYC 8614 - Prac School Psyc

- PSYC 8809 - Adv Sch Psych Practicum

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

Social and Behavioral Sciences, (PhD)

Doctor of Philosophy (PhD) Program

Satish Kedia, PhD
Professor and Graduate Program Coordinator
205 Robison Hall
901.678.1433

Email: skkedia@memphis.edu

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

- PUBH 8170 - Epidemiology in PUBH
- PUBH 8160 - Soc/Behav Science Principles

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 appllication. 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
- PUBH 8132 - Health Program Evaluation
- PUBH 8340 - Behavioral Intervention Develp
- PUBH 8161 - Health Behavior Theories

Doctoral Seminar Core (3 credit hours)

- PUBH 8901 - Doctoral Professional Dev Sem

Research Methods Core (12 credit hours)

Quantitative Methods Course (3 credit hours) – Select one

- PUBH 8604 - Res Methods in Soc/Behav Sci
- PSYC 8301 - Research Design & Meth

Quantitative Elective Courses (6 credit hours) – Select two

- PUBH 8141 - Epidemiologic Survey Method
- PUBH 8172 - Epidemiology PUBH II
- PUBH 8174 - Epidemiology PUBH III

- PUBH 8450 - Randomized Clinical Trials I

Qualitative Courses (3 credit hours) – Select one

- PUBH 8334 - Comm Based Part Resrch Mthds
- PUBH 8347 - Qualitative Mtds Hlth Research

Biostatistics Core (6 credit hours)

Biostatistics II (3 credit hours)

- PUBH 8152 - Biostatistical Methods II

Select one additional course:

- PSYC 8302 - Adv Statistics Psych I
- PUBH 8104 - Large Data Sets/PUBH Research
- PSYC 8304 - Meas Th & Psychomet
- PUBH 8305 - Quant Meth Review Rsch
- PUBH 8306 - Linear Struct Modeling
- PUBH 8308 - Appl Multivariate Stat
- PUBH 8310 - Mixed Model Regression Analys
- PUBH 8311 - Appl Categorical Data Analys **

Elective Courses (12 Credit hours)

Public Health Elective Courses (6 credit hours)

- PUBH 8800 - Guided Research in PUBH *
- PUBH 8104 - Large Data Sets/PUBH Research
- PUBH 8140 - Epidemiology Chronic Disease
- PUBH 8333 - Addictive Behaviors
- PUBH 8335 - Struct/Environ Iss/Urban Comm
- PUBH 8336 - Women's Health
- PUBH 8337 - Public Health Nutrition
- PUBH 8338 - Critical Issues in Global Hlth
- PUBH 8341 - Physical Activity/Public Hlth
- PUBH 8342 - Epidemiology Min/Ethnic Pop
- PUBH 8343 - Tobacco Use:Cause,Conseq,Ctrl
- PUBH 8345 - Health Literacy
- PUBH 8346 - Public Mental Health
- PUBH 8400 - Special Problems
- PUBH 8447 - Public Health Genomics

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
- EDPR 8165 - Social Devlpmnt/Child
- ESCI 8613 - GIS and Human Health
- PSYC 8207 - Developmental Psyc
- PSYC 8217 - Social Psychology
- PSYC 8416 - Child Psychopathology
- PSYC 8506 - Sem Clinical Psyc
- SOCI 8851 - Medical Sociology

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

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. An undergraduate overall grade point average of 3.00/4.00. Applicants with an undergraduate GPA below this minimal level are admitted only if other supporting data are exceptional.
2. GRE scores (Verbal, Quantitative, and Written Analytical).
3. 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.
4. 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.
5. 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.

Program Requirements—EdS Degree (minimum 30 hours)

Psychology courses (9 hours):

- PSYC 7301 - Research Design & Meth
  or
- Research elective
- PSYC 7614 - Prac School Psyc
- PSYC 8807 - Academic Interventions

Education courses (15 hours):

- LEAD 6000 - Educ/Schl/Am Society
- EDPR 7511 - Intro Ed and Psych Measurement **
- EDPR 7541 - Stat Meth App Ed I **
- SPED 7000 - Intro Excptional Learnr **
  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

Written examination

Combination Degree

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.

Professional - Law, (MBA/JD)

Master of Business Administration

An MBA is designed for those students who are interested in managerial careers -- for those with leadership aspirations and abilities. Specific program objectives include:

1. acquisition of managerial-level knowledge of and skills in economics, financial reporting and analysis, operations, strategic use of science and technology, and creating customer and societal value in the global arena;
2. acquisition of managerial-level knowledge of and skills in data-based decision making and leadership.
3. acquisition of managerial-level knowledge of and appreciation for the global implications of all business decision-making.

Program Admission

Applicants to all MBA programs must have:

1. An undergraduate degree from an accredited college or institution.
2. A Graduate School application for admission and the appropriate fee.
3. An official transcript from each college or university attended.
4. Applicants must present an acceptable score on a recent (five years or less) Graduate Management Admission Test (GMAT) or the Graduate Record Examination (GRE). Official GRE or GMAT scores are required for admission. Admission is competitive based on standardized test scores, cumulative grade point averages, (etc.).
5. A current resume
6. A personal statement of interest
7. Response to the required essay questions (available on the MBA website)
8. Two letters of recommendation

A separate application and additional information materials must be submitted for admission to the Executive concentration (www.memphis.edu/executivemba/) or the CD-MBA concentration (www.memphis.edu/cdmba/). Business experience requirements include one year work experience for the MBA and at least five years professional or managerial experience for the Executive concentration.

Arrangements for taking the GMAT can be made by using www.mba.com. Arrangements for taking the GRE can made by writing to the Educational Testing Service, P.O. Box 6000, Princeton, New Jersey 08541-6000, by calling 1-866-473-4373, or by using www.ets.org.

Registration packets for the GRE may be obtained from the Testing Center on campus in John W. Brister (JWB) Hall room 112.

Applicants with at least five years of managerial experience may choose to submit a portfolio of professional accomplishments in lieu of a GMAT or GRE score. An admissions committee will review each applicant's portfolio of professional accomplishments to decide if a GMAT/GRE waiver is warranted. If an applicant's portfolio is not adequate to warrant a GMAT/GRE waiver, that applicant will be asked to submit a GMAT or GRE score, as per standard admission procedure. Applicants who request a GMAT/GRE waiver must submit their portfolios to the department academic advisor.

Qualified applicants may enter the MBA or the MBA/JD in either the Fall or Spring semesters, while admission to the MBA with Executive concentration, and the CD-MBA is for Fall only.

MBA Preparatory Knowledge

Students entering the MBA programs are expected to be fluent in the language of business; students are expected to have a working understanding of key concepts in economics, finance, and accounting. In addition, students are expected to have a working proficiency in statistics. If students have deficiencies in the basic concepts and skills of

business, they may be counseled (by the MBA Program Director and/or the MBA program staff) to take preparatory courses and/or secure self-paced review materials. There are no prerequisite courses to the MBA programs.

MBA Program Requirements

Each candidate for an MBA degree must complete a minimum of 36 semester hours of course work that include 30 hours of Core Knowledge and Skills. Students who desire a concentration are required to take an additional 12 hours of coursework beyond the 30 hour Core as per the specifications of each concentration. Students who do not desire an MBA concentration are required to take two 3 hour electives (approved by the MBA Program Director) beyond the 30 hour Core.

Core Knowledge and Skills (30 hours):

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

MBA with Concentration in Law (MBA/JD)

Core Knowledge and Skills courses are identical to the MBA program. Electives for this concentration are offered through the Cecil B. Humphreys School of Law and must be approved by the Director of MBA Programs in the Fogelman College. For JD/MBA students, the director of the MBA program will have the discretion to approve course substitutions of up to 9 credits from the following list of courses offered by the law school:

- Administrative Law (311)
- Antitrust (318)
- Arbitration/Labor (315)
- Banking Law (385)
- Bankruptcy Reorganization Seminar (442)
- Business Organizations II (319)
- Commercial Paper (323)
- Corporate Finance (384)
- Debtor-Creditor Relations (327)
- Employment & Labor Law Seminar (443)
- Environmental Law (328)
- Environmental Law Seminar (438)
- Comparative Law Seminar (441)
- Immigration Law (337)
- Labor Law (343)

- Land Use Planning (344)
- Non-Profit Organizations (370)
- Problems in Bankruptcy (354)
- Partnership Tax (352)
- Realty Transactions (358)
- Sales (359)
- Securities Regulations (361)
- Unfair Trade Practices (366)
- International Finance (338)
- International law (340)
- Transnational Legal Problems (365)

Note:

To facilitate customization, students are encouraged to consult with the director of the MBA program to add to this list in order to complement their desired course plan.

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. An undergraduate overall grade point average of 3.00/4.00. Applicants with an undergraduate GPA below this minimal level are admitted only if other supporting data are exceptional.
2. GRE scores (Verbal, Quantitative, and Written Analytical).
3. 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.
4. 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.

5. 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.

Program Requirements—MA Degree (30 hours)

Psychology courses (22 hours):

- PSYC 7800 - Intro School Psychology
- PSYC 7207 - Developmental Psyc
- PSYC 7802 - Child Disability/Family
- PSYC 7803 - Psych Ed Assessmnt I
- PSYC 7804 - Psych Ed Assessmnt II
- PSYC 7805 - Psych Consultation
- PSYC 7806 - Sch Psych Interventions

Education courses (15 hours):

- EDPR 7511 - Intro Ed and Psych Measurement **
- EDPR 7541 - Stat Meth App Ed I **
- LEAD 6000 - Educ/Schl/Am Society
- SPED 7000 - Intro Excptional Learnr ** (or SPED elective if a course focusing on characteristics of exceptional children course was taken at the undergraduate level)

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
  or
- Research elective
- PSYC 7614 - Prac School Psyc
- PSYC 8807 - Academic Interventions

Education courses (15 hours):

- LEAD 6000 - Educ/Schl/Am Society
- EDPR 7511 - Intro Ed and Psych Measurement **

- EDPR 7541 - Stat Meth App Ed I **
- SPED 7000 - Intro Excptional Learnr **

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

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 principle/school principle 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 superintend the applicant is currently working for (No GRE requirement).

Program Requirements

- LDPS 7141 - The Principalship **
- LEAD 7004 - Instructional Leadership **
- EDPR 7524 - Res Meths for Schl Accntblty
- LDPS 7120 - Supervisory Process
- LDPS 7150 - Educational Law **
- LEAD 7210 - Field Experiences **

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.

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
- ENGL 7327 - Studies in Form and Genre: African American Literature
- ENGL 7328 - Studies in Major Authors: African American Literature
- ENGL 7329 - African American Literature, Beginnings to 1850
- ENGL 7332 - Literature of the African Diaspora
- ENGL 7335 - African American Literature, 1989-Present

- ENGL 7336 - African American Literary Theory
- ENGL 7337 - African-American Literature, 1930-1988
- ENGL 7338 - Amiri Baraka and the Black Arts Movement
- ENGL 7468 - Literature of the Harlem Renaissance **
- ENGL 7469 - African American Women Writers **

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
- ENGL 7294 - Studies in 19th-Century American Literature
- ENGL 7391 - Modern American Novel
- ENGL 7392 - American Poetry
- ENGL 7393 - American Drama
- ENGL 7464 - Contemporary American Literature

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
- CHEM 6416 - Molecular Spectroscopy
- CHEM 7211 - Adv Analytical Chem I
- CHEM 7212 - Adv Analytical Chem II

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 Economic Analytics Graduate Certificate

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 7100 - Econ for Global Executive **
- BA 7503 - Advanced Business Analytics
- ECON 6120 - Economic Forecasting
- ECON 6315 - Applied Macroeconomics
- ECON 6820 - Econometrics

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.

Applied Lean Leadership Graduate Certificate

Graduate Certificate

Program Admission

Students must have completed a bachelor's degree with a cumulate 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 **
- TECH 7401 - Lean Fundamentals ** *

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 *
- TECH 7404 - Wrld/Clas Manfct Concpt ** *
- TECH 7406 - Material Handling/Auto *
- TECH 7408 - Production Processes
- TECH 7414 - Manuf Strat/Syst Design ** *

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 **
- CCFA 7002 - Arts Entrepreneurship II **
- CCFA 7003 - Arts Entrepreneurship III
- CCFA 7004 - Arts Entrepreneurship IV

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 seven (7) 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
  or
- SPRT 7410 - Athletic Team Management
  or
- SPRT 7420 - Sport Marketing **
  or
- SPRT 7503 - Strat Mgmt Sprt Cmrce Org **
  or
- SPRT 7603 - Admin of Athletics **
  or
- SLC 6410 - College Athletics Compliance
  and
- SPRT 7142 - Seminar in SPRT **

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 /
- AUSP 8006 - Lang & Speech Devel

- AUSP 7300 - Lang Dis In Children /
- AUSP 8300 - Lang Dis In Children

- AUSP 7308 - Augmentative/Alternatv Comm /
- AUSP 8308 - Augmentative/Alternatv Comm

Electives (3 credit hours):

- AUSP 6205 - ASL for Speech, Audio, & Educ
- AUSP 6300 - Autism: Communic & Socializtn
- AUSP 7212 - Autism Spect Disord/Rel Disabl
- AUSP 7302 - Lang Disordrs/Adults I

- AUSP 7303 - Lang Disordrs/Adults II
- PSYC 7802 - Child Disability/Family /
- PSYC 8802 - Child Disability/Family

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/.

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
- SPED 8600 - Intro to Aut Spec Dis

- SPED 7601 - ASD: Class Mgmt and Design
- SPED 8601 - ASD: Class Mgmt and Design

- SPED 7602 - ASD: Instruct Methods I
- SPED 8602 - ASD: Instruct Methods I

- SPED 7603 - ASD: Instruct Methods II
- SPED 8603 - ASD: Instruct Methods II

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 **

Electives

- AVIA 7111 - Cognitive Ergonomics in AV
- AVIA 7113 - Judgment & Decision Making AV **

- AVIA 7115 - Selection & Beh Health in AV **
- AVIA 7117 - Flight Deck Ergonomics **
- AVIA 7119 - Training and Simulation **
- AVIA 7121 - HF Techniques and Methods **

Capstone

- AVIA 7998 - Comprehensive Exam

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):

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
  or
- BINF 7201 - Special Topics in Bioinformatics
- COMP 6030 - Desgn/Anlys Algorithms
- BIOL 6490 - Intro Genomics/Bioinformatics
  or
- BINF 7701 - Adv. Genomics & Bioinformatics
- MATH 6611 - Intro Applied Statistics
  or
- PUBH 7150 - Biostatistical Methods I **
- PUBH 7152 - Biostatistical Methods II **
  or
- PUBH 7153 - Biostat. in Bioinformatics
  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

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). The Department recently became affiliated with NABE; our MA Program is now an official training program for the CBE.

Admission Requirements

Same as the college and university requirements.

Program Requirements

The certificate program requires completion of 12 credit hours, chosen from the list of coures that follows:

- ECON 7100 - Econ for Global Executive **
- FIR 7155 - Global Financial Mgmt **
- ECON 6315 - Applied Macroeconomics
- ECON 6810 - Quant Economic Analysis
- ECON 6550 - Game Theory/Strategic Analysis
- ECON 6023 - Personnel Economics

Graduation Requirements

To obtain the certificate, a student must take four of the six 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 *
  *COMP 7900 - Cyber Ethics may be substituted for MIS 7455.
- MIS 7670 - Information Security Mgmt
- MIS 7615 - Enterprise Network & Security

Three hours (one course) from the following group:

- MIS 6160 - Mobile Application Development
- MIS 7650 - Info Syst Global Enterprise **
- ACCT 7420 - Acct Databases/Systems

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 **
- COMP 7115 - Database Systems

One course from this group:

- MIS 7610 - Sys Analysis & Design **
- COMP 7012 - Fndtns/Software Engr

- COMP 8012 - Fndtns/Software Engr

Both courses below:

- MIS 7671 - Project/Change Mgmt **
- MIS 6672 - Project Mgmt Tools/Lead

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. 7 5 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
- COUN 7885 - Legal/Eth Issues Coun
- COUN 7630 - Clinical Mental Health Coun
- COUN 7632 - Intern Cmty/Mntl Hlth
- CPSY 7700 - Intrvntns Mntl Disordrs

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 distributed as follows:

The following course is required:

The following course is required: PSYC 7514-PSYC 8514, Seminar: Cognitive Science (Same as COMP 7514-COMP 8514 and PHIL 7514-PHIL 8514)

One of the following courses is required:

- PSYC 7207 - Developmental Psyc
- PSYC 8207 - Developmental Psyc

- PSYC 7208 - Psyc Of Perception
- PSYC 8208 - Psyc Of Perception

- PSYC 7211 - Cognitive Processes
- PSYC 8211 - Cognitive Processes

- PSYC 7217 - Social Psychology
- PSYC 8217 - Social Psychology

- PSYC 7219 - Soc/Persnlty Devel
- PSYC 8219 - Soc/Persnlty Devel

- PSYC 7220 - Social Cognition

- PSYC 8220 - Social Cognition

- PSYC 7222 - Psychology Human Memory
- PSYC 8222 - Psychology Human Memory

- PSYC 7407 - Cognition & Emotion
- PSYC 8407 - Cognition & Emotion

- PSYC 7314 - Programming Computation in Psych
- PSYC 8314 - Programming Computation in Psych

- PSYC 7701 - Behavioral Neuroscience
- PSYC 8701 - Behavioral Neuroscience

- AUSP 6300 - Autism: Communic & Socializtn

One of the following courses is required:

- AUSP 8017 - Digitl Signl Proc Sp/Hear

- EECE 7216 - Computer Vision
- EECE 8216 - Computer Vision

- EECE 7262 - Logicl Fndtns Artf Intl
- EECE 8262 - Logicl Fndtns Artf Intl

- EECE 7266 - Prolog Proc/Intel Syst
- EECE 8266 - Prolog Proc/Intel Syst

- COMP 6720 - Intro Artificial Intlg (Same as EECE 6720)
- COMP 6730 - Expert Systems (Same as EECE 6730.)

- COMP 7118 - Data Mining **
- COMP 8118 - Data Mining **

- COMP 7150 - Fundamentals of Data Science **
- COMP 8150 - Fundamentals of Data Science **

- COMP 7282 - Evolutionry Computation
- COMP 8282 - Evolutionry Computation

- COMP 7720 - Artificial Intelligence
- COMP 8720 - Artificial Intelligence (Same as EECE 7720-EECE 8720)

- COMP 7740 - Neural Networks
- COMP 8740 - Neural Networks (Same as EECE 7740-EECE 8740)

- COMP 7745 - Machine Learning **
- COMP 8745 - Machine Learning **

- COMP 7760 - Control Auto Agents
- COMP 8760 - Control Auto Agents

- COMP 7770 - Knowledge Rep/Reason
- COMP 8770 - Knowledge Rep/Reason

- COMP 7780 - Natural Lang Processng
- COMP 8780 - Natural Lang Processng (Same as PSYC 7221-PSYC 8221)

- PSYC 7223 - Intelligent Tutoring
- PSYC 8223 - Intelligent Tutoring

- PSYC 7313 - Computational Models Cog Sci
- PSYC 8313 - Computational Models Cog Sci

One of the following courses is required:

- AUSP 7002 - Sem Comm Sciences
- AUSP 8002 - Sem Comm Sciences

- AUSP 7000 - Speech Science
- AUSP 8000 - Speech Science

- AUSP 7006 - Lang & Speech Devel
- AUSP 8006 - Lang & Speech Devel

- AUSP 7008 - Acoustic/Percept Phonetics
- AUSP 8008 - Acoustic/Percept Phonetics

- AUSP 7011 - Psycholinguistics
- AUSP 8011 - Psycholinguistics

- ENGL 7507 - Empirical Mthds Ling Rsrch
- ENGL 8507 - Empirical Mthds Ling Rsrch

- ENGL 7508 - Corpus Linguistics
- ENGL 8508 - Corpus Linguistics

- ENGL 7511 - Survey of Linguistics **

- ENGL 8511 - Survey of Linguistics

- ENGL 7512 - Morphology and Syntax
- ENGL 8512 - Morphology and Syntax

- ENGL 7590 - Appl/Theory Linguistics
- ENGL 8590 - Appl/Theory Linguistics

Electives: Total credits: 3 hours (1 course)

One of the following courses is required outside of the student's field. Other elective courses may be selected in consultation with the program director.

- AUSP 6300 - Autism: Communic & Socializtn

- AUSP 7002 - Sem Comm Sciences
- AUSP 8002 - Sem Comm Sciences

- AUSP 7000 - Speech Science
- AUSP 8000 - Speech Science

- AUSP 7006 - Lang & Speech Devel
- AUSP 8006 - Lang & Speech Devel

- AUSP 7008 - Acoustic/Percept Phonetics
- AUSP 8008 - Acoustic/Percept Phonetics

- AUSP 7011 - Psycholinguistics
- AUSP 8011 - Psycholinguistics

- AUSP 8017 - Digitl Signl Proc Sp/Hear

- AUSP 8112 - Sem Audiology

- EECE 7216 - Computer Vision
- EECE 8216 - Computer Vision

- EECE 7262 - Logicl Fndtns Artf Intl
- EECE 8262 - Logicl Fndtns Artf Intl

- EECE 7266 - Prolog Proc/Intel Syst
- EECE 8266 - Prolog Proc/Intel Syst

- EECE 7900-7910 - Special Topics in Electrical Engineering
- EECE 8900-8910 - Special Topics in Electrical Engineering

- COMP 6720 - Intro Artificial Intlg (Same as EECE 6720)
- COMP 6730 - Expert Systems (Same as EECE 6730.)

- COMP 7118 - Data Mining **
- COMP 8118 - Data Mining **

- COMP 7150 - Fundamentals of Data Science **
- COMP 8150 - Fundamentals of Data Science **

- COMP 7282 - Evolutionry Computation
- COMP 8282 - Evolutionry Computation

- COMP 7720 - Artificial Intelligence
- COMP 8720 - Artificial Intelligence (Same as EECE 7720-EECE 8720)

- COMP 7740 - Neural Networks
- COMP 8740 - Neural Networks (Same as EECE 7740-EECE 8740)

- COMP 7745 - Machine Learning **
- COMP 8745 - Machine Learning **

- COMP 7760 - Control Auto Agents
- COMP 8760 - Control Auto Agents

- COMP 7770 - Knowledge Rep/Reason
- COMP 8770 - Knowledge Rep/Reason

- COMP 7780 - Natural Lang Processng
- COMP 8780 - Natural Lang Processng (Same as PSYC 7221-PSYC 8221)

- IDT 7070 - Instructional Design Process I **
- IDT 8070 - Instructional Design Process I

- IDT 7074 - Thry/Models Instructnal Design **
- IDT 8074 - Thry/Models Instructnal Design

- IDT 7090 - Dev Interactve Lrng Envirnmt I **
- IDT 8090 - Dev Interactve Lrng Envirnmt I

- PHIL 6421 - Philosophy Of Mind

- PSYC 7207 - Developmental Psyc
- PSYC 8207 - Developmental Psyc

- PSYC 7208 - Psyc Of Perception
- PSYC 8208 - Psyc Of Perception

- PSYC 7211 - Cognitive Processes
- PSYC 8211 - Cognitive Processes

- PSYC 7217 - Social Psychology
- PSYC 8217 - Social Psychology

- PSYC 7219 - Soc/Persnlty Devel
- PSYC 8219 - Soc/Persnlty Devel

- PSYC 7220 - Social Cognition
- PSYC 8220 - Social Cognition

- PSYC 7222 - Psychology Human Memory
- PSYC 8222 - Psychology Human Memory

- PSYC 7223 - Intelligent Tutoring
- PSYC 8223 - Intelligent Tutoring

- PSYC 7301 - Research Design & Meth
- PSYC 8301 - Research Design & Meth

- PSYC 7302 - Adv Statistics Psych I
- PSYC 8302 - Adv Statistics Psych I

- PSYC 7313 - Computational Models Cog Sci
- PSYC 8313 - Computational Models Cog Sci

- PSYC 7407 - Cognition & Emotion
- PSYC 8407 - Cognition & Emotion

- PSYC 7314 - Programming Computation in Psych
- PSYC 8314 - Programming Computation in Psych

- PSYC 7514 - Sem Cognitive Science
- PSYC 8514 - Sem Cognitive Science (repeatable; Same as COMP 7514-COMP 8514 and PHIL 7514-PHIL 8514)

- PSYC 7701 - Behavioral Neuroscience
- PSYC 8701 - Behavioral Neuroscience

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.

Note:

An interdisciplinary governance structure will manage and oversee the graduate certificate with primary leadership and accountability based in the Institute for Intelligent Systems.

The Associate Director of the Institute for Intelligent Systems will be the graduate coordinator for the program and will advise students regarding courses. This advising process will include an introductory meeting with students entering the certificate that focuses on course options and course prerequisites for later electives. The program will also have a Governance Board appointed by the Director of the Institute for Intelligent Systems. The Board will consist of 6 members. Members will come from the Institute for Intelligent Systems or affiliated departments.

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) 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
- 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
- COMP 7900 - Cyber Ethics
- COMP 7125 - Computer Forensics
- LAW 386. Cyber Law
- CJUS 6180 - Corp/White Collar Crime **

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
- MIS 7620 - Business Machine Learning I **
- MIS 7710 - Web Analytics
- MIS 7720 - Bus. Artificial Intelligence

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

Three hours (one course) from this group:

- MIS 7660 - Advanced Data Management
- COMP 7116 - Adv Database Systems

Three hours (one course) from this group:

- MIS 7620 - Business Machine Learning I **
- COMP 7118 - Data Mining **

Three hours

- MIS 7621 - Business Machine Learning II

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 **
- COMP 8150 - Fundamentals of Data Science **

- COMP 7745 - Machine Learning **
- COMP 8745 - Machine Learning **
  or
- COMP 6745 - Intro to Machine Learning

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
- COMP 7115 - Database Systems
- COMP 7116 - Adv Database Systems
- COMP 8116 - Adv Database Systems
- COMP 7118 - Data Mining **
- COMP 8118 - Data Mining **
- COMP 7130 - Inform Retrieval/Web Search
- COMP 8130 - Inform Retrieval/Web Search
- COMP 7740 - Neural Networks
- COMP 8740 - Neural Networks
- COMP 7747 - Adv Topics in Machine Learning
- COMP 8747 - Adv Topics in Machine Learning
- COMP 7780 - Natural Lang Processng
- COMP 8780 - Natural Lang Processng
- MATH 7670 - App Stochastic Models
- MATH 8670 - App Stochastic Models
- MATH 7680 - Bayesian Inference
- MATH 8680 - Bayesian Inference
- PSYC 7302 - Adv Statistics Psych I
- PSYC 8302 - Adv Statistics Psych I

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
- COUN 6901 - Prin/Tech/Rehab Counsel
- UNIV 7400 - Family Disability Law and Practice

Choose one 3-hour elective from the following list:

- ANTH 6531 - Alcohol/Drugs/Culture
- PLAN 7201 - Plan Comm Facilities
- CJUS 7510 - Law And Society
- POLS 7111 - Issues in Health Services Administration
- HADM 7114 - Long Term Care Administration
- HADM 7115 - Public Health Organizatn/Mgmt
- PSYC 7217 - Social Psychology
- PADM 6208 - Mental Health Policy and Law
- PADM 7604 - Social Science In Law
- SOCI 7411 - Social Stratification
- SOCI 7512 - Deviance and Diversity
- COMM 7012 - Seminar Health Comm **
- NUTR 7212 - Appl Nutr for Health
- HPRO 7182 - Health Promotion **
- HPRO 7702 - Contemporary Hlth Issue
- HPRO 7703 - Life Phys Act & Hlth
- SPED 7000 - Intro Excptional Learnr **
- UNIV 7796 - Independent Study

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 (6 credit hours, taken twice)
- NUTR 7415 - Prof Issues Nutr (2 credit hours)
- NUTR 7482 - Clinical Residency NUTR (1 credit hour)

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 **
- JRSM 7330 - Social Media & Community Engagement **

Electives: 6 credit hours chosen from the following:

- UNIV 7110 - Internship 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
- MGMT 7270 - Ventur/Bldg/Sust Succ Enterp
- FIR 7648 - Entrepreneurial Finance
- ACCT 7412 - Legal/Acctg Aspects Entrep

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).

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 *
- FTHT 7001 - Practicum in Faith Health 2 *
- FTHT 7002 - Comm & Whole Person Healthcare
- FTHT 7003 - Intersection Faith and Health

Note:

* The two practicum courses utilize the Experiential Learning Credit; see 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.

Family Nurse Practitioner Post-Master's Certificate

Post-Master's Certificate

The Family Nurse Practitioner (FNP) Certificate program provides a formal program of study for master's-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 master's 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 the Master of Science in Nursing degree 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 Master's degree in nursing from an accredited program (NLNAC or CCNE).
2. Satisfactory completion (B or better) of the following courses at the Master's 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 master's 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 (Heptavax); measles, mumps, rubella (MMR); polio; tetanus, diptheria, pertussis (Tdap), and varicella vaccinations and/or titers if available.
- Freedom from tuberculosis as evidenced by a negative PPD or health provider examination.
- Annual flu shot vaccination, unless medically contraindicated.
- Evidence of current professional malpractice insurance in the amount of $1,000,000 per occurrence and $6,000,000 in the aggregate.

Post-Master's 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 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-Master's Certificate must be completed within 5 calendar years.

Family Nurse Practitioner Post-Master's Certificate (21 credit hours)

The Post-Master's 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-Master's Certificate Required Courses

- NURS 7601 - Family Nurse Practnr I **
- NURS 7602 - Family Nurs Prac I/Clin ** (120 clock hours)
- NURS 7603 - Family Nurs Practnr II **
- NURS 7604 - Family Nurs Pract II/CLN ** (240 clock hours)
- NURS 7605 - Family Nurs Pract III **
- NURS 7606 - Family Nurs Prac III Cln ** (120 clock hours)
- NURS 7609 - FNP Practicum ** (240 clock hours)

Family Nurse Practitioner Concentration Progression and Retention Requirements

1. Family Nurse Practitioner students must complete a minimum of 500 clock hours to meet the academic and practicum requirements for national certification (NTF Criteria, 2016).
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-masters certificate, who does not write a these 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 Master's 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.

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 **
- FIR 7155 - Global Financial Mgmt **
- FIR 7410 - Invst Thry Portfol Mgmt **
- FIR 7840 - Quantitative Finan App
- FIR 7810 - Adv Financial Mgmt
- FIR 7173 - Financial Analys/Certification **
- FIR 7911 - Internship in FIR
- FIR 7302 - Rl Estate Dvlpmt & Sustainblty
- FIR 7725 - Eqty Mkts:Trad/Struct
- FIR 8725 - Financial Mkts: Trad/Struct
- ACCT 7140 - Financial Statement Analysis **
- ECON 7100 - Econ for Global Executive **
- FIR 6011 - Retirement and Estate Planning **
- FIR 6331 - Stock Portfolio Mgmt

- FIR 6550 - International Finance **
- FIR 6610 - Cases Managerial Fin
- FIR 6620 - Cases in Financial Planning
- FIR 6710 - Commercial Banking
- FIR 6720 - Mgmt Financl Institutns **
- FIR 6721 - Fixed Income and Derivatives
- FIR 6730 - Financial Analysis/Certification
- FIR 6310 - Real Estate Law **
- FIR 6320 - Real Estate Finance **
- FIR 6340 - Real Estate Appraisal **
- FIR 6350 - Real Estate Investment **
- FIR 6870 - Risk Management **

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
- CIVL 7262 - Freight Demand Modeling

Electives:

- CIVL 7166 - Design Hgwy Airpt Pvmt
- CIVL 7012 - Prob Meth In Engr **
- CIVL 7267 - Maritime Economics
- CIVL 7268 - Transport Network Flows
- CIVL 7263 - Intro. to Num. Opt. for Eng **
- CIVL 7264 - Simulation Modeling
- CIVL 7362 - Port Planning Mgmt & Operation
- CIVL 7993 - Project & Report

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.

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 **
- ESCI 6525 - Adv Geographic Info Sci
- ESCI 7998 - Capstone GIS Project

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.

Health Analytics Graduate Certificate

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 **
- PUBH 7152 - Biostatistical Methods II **
- PUBH 7308 - Appl Multivariate Stat
- PUBH 8308 - Appl Multivariate Stat
- PUBH 7109 - SAS Programming for Public Health Professionals I (3)
- PUBH 7104 - Large Data Sets/PUBH Research
- PUBH 8104 - Large Data Sets/PUBH Research

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 **
- HADM 8109 - Health Information Systems
- PUBH 7153 - Biostat. in Bioinformatics
- PUBH 8153 - Biostat. in Bioinformatics
- PUBH 7210 - SAS Programming for Public Health Professionals II (3)
- PUBH 7309 - Appl Surv Analys in Pub Hlth
- PUBH 8309 - Appl Surv Analys in Pub Hlth
- PUBH 7310 - Mixed Model Regression Analys
- PUBH 8310 - Mixed Model Regression Analys
- PUBH 7311 - Appl Categorical Data Analys
- PUBH 8311 - Appl Categorical Data Analys **

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 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 **
- HADM 7105 - Hlth Policy & Org Hlth Svs **
- HADM 7110 - Leadershp/Org Chg in Hlth Care **
- PUBH 7180 - Foundations of PUBH **

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 **
- HIAD 8541 - Issues/Trends Tchg Adults **
- LEAD 8500 - Adult Lrng/Leadership **
- HIAD 8542 - Global/Compartv Issues Ldrshp **
- IDT 7062 - Teaching, Learning, & Tech ** / IDT 8062 - Teaching, Learning, & Tech **
- IDT 7063 - Models & Innovations of EdTech ** / 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 addresses 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 **
- HPRM 7331 - Hospitality Services Op Mgmt **
- HPRM 7340 - Strategic Pricing & Revnue Max
- HPRM 7442 - Adv Strtg Mgmt in Hosp

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 **
- EECE 7214 - Image Processing
- EECE 7215 - Digital Signal Proc **
- EECE 7217 - Multimedia Info Process **
- EECE 7251 - Random Signals & Noise **

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

This track is designed for instructional designers and developers who work in non-education related settings such as business, government, military, and health care.

The following four courses are required for the Design and Development Track:

- IDT 7060 - Message Design **
- IDT 8060 - Message Design

- IDT 7070 - Instructional Design Process I **
- IDT 8070 - Instructional Design Process I

- IDT 7080 - Learning Experience Design **
- IDT 8080 - Learning Experience Design

- IDT 7090 - Dev Interactve Lrng Envirnmt I **
- IDT 8090 - Dev Interactve Lrng Envirnmt I

Note:

More information about the Certificate is located at this web site: 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. 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.

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

This track is designed for educators who want to integrate the use of computers in the classroom. The focus of these courses is to develop the technology competencies needed for the development, utilization, and integration of instructional computing technology in the classroom.

Students may choose four of the following courses for the Educational Technology Track:

- IDT 7060 - Message Design **
- IDT 8060 - Message Design

- IDT 7061 - Instructional Design & EdTech **
- IDT 8061 - Instructional Design & EdTech **

- IDT 7062 - Teaching, Learning, & Tech **
- IDT 8062 - Teaching, Learning, & Tech **

- IDT 7063 - Models & Innovations of EdTech **
- IDT 8063 - Models & Innovations of EdTech **

- IDT 7064 - EdTech & Instructl Development **
- IDT 8064 - EdTech & Instructil Development **

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. 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.

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.
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 **
- UNIV 7100 - Rsrch/Intrdiscipl Study **
- UNIV 7200 - Liberal Studies Sem **
- 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 **
- LITL 7540 - Lit Inst in the Elem Schl **
- LITL 7541 - Lit Assess and Intervtn **
- LITL 7544 - Adolscnt Lit Instruc
- LITL 7560 - Literacy Leader and Coach **

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.
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.

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 **
- PADM 7602 - Public Bdgt Adm/Fin **
- PADM 7224 - Sem Urban Problems **

Electives, 6 hours chosen from the following:

- PADM 7605 - Human Resources Admin **
- PADM 7612 - Program/Policy Evaltn
- PADM 7603 - Pblc/Nonprofit Contr **
- PLAN 7000 - Planning the American City
- PLAN 7202 - Land Use Planning
- POLS 6222 - Urban Politics
  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
- ICL 7501 - Elementary/Middle School Math Curriculum
- ICL 7508 - Sem Mathematics Educ **

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 or SPED 8201 - Edu Prog for Stud Learn Disab
- SPED 7203 - Ed Prog for Stud Emot BehavDis or SPED 8203 - Ed Prog for Stud Emot BehavDis
- SPED 7206 - Special Education Law ** or SPED 8206 - Special Education Law
- SPED 7522 - Tiered Interventions or SPED 8522 - Tiered Interventions

Multimedia Storytelling Graduate Certificate

The Graduate Certificate in Multimedia Storytelling offers students both practical and theorectical 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
- JOUR 6155 - Multimedia Sports Reporting
- JOUR 6160 - Food Writing/Reporting
- JOUR 6170 - Business Reporting/Writing
- JOUR 6180 - Public Issues Writing/Reporting
- JOUR 6190 - Opinion Writing/Reporting

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 **
- ARTH 7661 - Museum Practices **
- ANTH 7662 - Museums & Communities **
- ARTH 7662 - Museums & Communities **

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 School of Music. Additional information can be found in the School of Music Graduate Student Handbook. For course approval, contact the Associate Director of Graduate Studies in the School of Music, Dr. Kevin Sanders."

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

Nursing Education Post-Master's Certificate

Post-Master's Certificate

The Nursing Education Certificate program provides a formal program of study for masters prepared nurses interested in obtaining a credential allowing them to teach in the College of Nursing. The program provides them with content necessary to teach nursing students in a specific area of nursing. Once students complete the certificate, they would be eligible to sit for the national certification exam in this area.

Prerequisites

The following prerequisite courses must be completed at the master's level with a grade of "B" or better prior to admission:

- NURS 7101 - Advanced Health Assessment **
- NURS 7102 - Advanced Health Assessment, Clinical **
- NURS 7103 - Advanced Pathophysiology **
- NURS 7104 - Advanced Pharmacology **

Program Admission

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 Education Post Masters Certificate Program include:

1. A Master's degree in nursing from an accredited program (NLNAC or CCNE).
2. Satisfactory completion (B or better) of the following courses at the Master's level:
    1. Advanced Health Assessment : 3 semester hours
    2. Advanced Health Assessment - Clinical or lab : 1 semester hour
    3. Advanced Pathophysiology : 3 semester hours
    4. 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 during the first semester following admission to 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/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 (15 credit hours total)

- NURS 7204 - Curriculum Design & Ed Theory **
- NURS 7205 - Evaluation Mthds in NursingEdu **
- NURS 7207 - Clinical Focus Practicum **
- NURS 7209 - Nursing Education Practicum **

One course from the following:

- NURS 7505 - Advanced Adult Health Nursing **
- NURS 7525 - Ecg/Crit Care Nurses **
- NURS 7635 - Advanced Pediatric Nursing **
- NURS 7515 - Adv Psych/Mentl Health Nursing
- NURS 7545 - Adv Womens Hlth/Perinatal Nurs **

Retention

Retention requirements are the same as for the MSN degree. All requirements for the post master certificate must be completed in 5 calendar years

Nursing Executive Leadership Post-Masters Certificate

Graduate Certificate

The Post Master's 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-Master's Certificate Program include:

1. A Master's 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.
6. 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 **
- NURS 7904 - Fin/Hum Rsrcs Patient Care **
- NURS 7905 - Improving Patient Care Del **
- NURS 7907 - Evidenc-Based Ldrshp Pract **
- NURS 7908 - Healthcare Finance Practicum **
- NURS 7909 - Nurse Executive Practicum **
- NURS 7303 - Health Care Finance **

Graduation Requirements

Completion of all courses within 5 calendar years.

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 7207, NURS 7209, NURS 7307, NURS 7309, NURS 7602, NURS 7604, NURS 7606, NURS 7609, 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.

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 - Physical Organic Chemistry
- CHEM 6416 - Molecular Spectroscopy
- CHEM 7311 - Adv Organic Chemistry
- CHEM 7312 - Synthetic Organic Chem

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.

Packaging Engineering Graduate Certificate - CURRENTLY NOT ACCEPTING APPLICATIONS

Graduate Certificate

The objectives of the certificate program are: (1). For local practitioners in the packaging and distribution industry to refine their knowledge in packaging engineering, (2). For other professionals with no prior packaging knowledge to look for a career change, (3). For current full time graduate students to expand their engineering knowledge or specialize their skills in packaging, and (4). For students with an undergraduate degree for a transition into graduate school.

Admissions Requirements

The certificate program in packaging engineering can be pursued concurrently with other graduate programs at the university. Applicants must have completed a bachelor's degree with a cumulative grade point average of at least 2.5 and satisfy admission requirements of the Graduate School with the classification of "Graduate Certificate." To apply for admission, the applicant must submit:

1. Transcripts of undergraduate degree program and any prior graduate study to Graduate Admissions;
2. A letter describing intent to pursue the certificate and its relevance to career goals to the Graduate Coordinator, Department of Mechanical Engineering;
3. Two letters of recommendation describing pertinent professional work experience when seeking to waive a course prerequisite to the Graduate Coordinator, Department of Mechanical Engineering.

Program Requirements

Successful completion of 9 hours of graduate credits distributed as follows, maintaining a GPA of at least 3.0 and completing the program within three academic years,

Required courses, 6 hours:

- MECH 6342 - Intro/Packaging Engineering
- MECH 7391 - Packaging Dyn/Distr Pack

Research Project

3 hours, registered under one of the listed courses and with approval of the program director:

- MECH 7990 - Engineering Practicum
- MECH 7391 - Packaging Dyn/Distr Pack
- MECH 7992 - Research Project
- MECH 7994 - Independent Study with a grade of B or better.

Note:

All 9 credit hours may be shared with a Master's program in the Department of Mechanical Engineering upon the approval of the Advisory Committee.

Graduation Requirements:

1. Student must file "Apply to Graduate" with Graduate School at beginning of the semester in which he/she will complete the 9-semester hour requirement;
2. A minimum grade of "B" or "S" in each course applicable to the certificate is required;

Student must also submit a Candidacy Form to the Mechanical Engineering Graduate Coordinator in order to verify information and collect approvals and signatures required for the Graduate School.

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.

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 **
- PADM 7605 - Human Resources Admin **

- PADM 7642 - Res Dev Nonprofit Org **
- PADM 7643 - Semn Nonprofit Adm&Philanth **

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.

Population Health Graduate Certificate

Graduate Certificate

Admissions Requirements:

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. 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 five courses (15 semester credit hours), as follows:

- PUBH 7150 - Biostatistical Methods I **
- PUBH 7170 - Epidemiology in PUBH **
- HADM 7105 - Hlth Policy & Org Hlth Svs **
- PUBH 7160 - Soc/Behav Science Principles **
- PUBH 7120 - Environmental Health I **

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.

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 **
- EDPR 8561 - Qualitative Mthds Educ **

- EDPR 7562 - Designing Qualitative Research **
- EDPR 8562 - Designing Qualitative Research **

- EDPR 7565 - Qual Methods and Analysis **
- EDPR 8565 - Qual Methods and Analysis **

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 **
- EDPR 8563 - Theoretical Frameworks in Qual **

- EDPR 7566 - Writing Qualitative Research (Week--long Summer Retreat)
- EDPR 8566 - Writing Qualitative Research (Week--long Summer Retreat)

- EDPR 8008 - Directed Readings
- EDPR 8081 - Supervised Research

- ANTH 7075 - Methods In Anthropology
- ANTH 8075 - Methods In Anthropology

- ANTH 7076 - Anthropology Writing/Analysis
- ANTH 8076 - Anth Data Analysis

- SOCI 7320 - Sem Meth Soc Res
- SOCI 8320 - Sem Meth Soc Res

- SOCI 7325 - Sem Qualitative Resrch
- SOCI 8325 - Sem Qualitative Resrch

- COMM 7332 - Topics in Comm Methods : Advanced Qualitative Research Methods
- COMM 8332 - Topics in Comm Methods : Advanced Qualitative Research Methods

- COMM 7434 - Qual Research Methods
- COMM 8434 - Qual Research Methods

- PSYC 7312 - Qualitative Resrch/Psyc
- PSYC 8312 - Qualitative Resrch/Psyc

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 ** or equivalent
- EDPR 8541 - Stat Meth App Ed I ** or equivalent

- EDPR 7521 - Introduction to Research Design and Methodology ** or equivalent

Participants complete 15 credits hours of graduate work. Six (6) credits are obtained from completing:

- EDPR 7542 - Stat Meth App Ed II **
- EDPR 8542 - Stat Meth App Ed II **

- EDPR 7511 - Intro Ed and Psych Measurement **
- EDPR 8511 - Intro Ed and Psych Measurement **

And nine (9) credits are selected from:

- EDPR 8549 - Multivariate Meth Educ **
- EDPR 8544 - SEM in EDU/Behav Research

- EDPR 7531 - Intro Modern Stat Packages
- EDPR 8531 - Intro Modern Stat Packages

- EDPR 7512 - Psychomet Thry/Ed Appl
- EDPR 8512 - Psychomet Thry/Ed Appl

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 are currently pursuing or have obtained a Graduate degree in clinical mental health counseling, rehabilitation counseling, clinical rehabilitation counseling, or college counseling to obtain Tennessee Licensure as a School Counselor.

Admission Requirements

1. Hold a graduate degree in counseling
2. Currently enrolled in Clinical Mental Health, clinical rehabilitation, rehabilitation program at The University of Memphis
3. Minimum Masters GPA of 3.0

Program Requirements

- COUN 7640 - Principles Schl Couns
- COUN 7542 - Child Counseling, Consultation and Intervention in Schools
- COUN 7826 - Schl Coun to Close Achvmnt Gap **
- COUN 7790 - Spc Prblms In Coun
- COUN 7642 - Intern Elem Sch Coun
- COUN 7646 - Intern Sec Sch Coun
- SPED 7000 - Intro Excptional Learnr **

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 **
- ICL 7133 - School Library Admin **
- ICL 7134 - Internet in the School Library **
- ICL 7301 - Literature in PreK-12 School **
- ICL 7730 - Found Librarianship **
- ICL 7731 - Intro To Bibliography **
- ICL 7800 - Adv Clinical Practicum **

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 of Social Work **

  Completion of one of the following two courses:
- SPED 7000 - Intro Excptional Learnr **
- SPED 7517 - Func Anlys/Treat Prob Behv

  Completion of 6 semester hours in an approved school social work setting:
- SWRK 7051 - Field Placement I
  and
- SWRK 7052 - Field Placement II
  OR
- SWRK 7053 - Field Placement III **
  and
- SWRK 7054 - Field Placement IV **
  OR
- ELC 7115 - Experiential Learning Credit
  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.

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

certificiate 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 a 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)

Students are required to take JRSM 7330 - Social Media & Community Engagement **. Then students would choose three (3) of the following courses:

- JRSM 7100 - Entrepreneurial Media **
- JRSM 7410 - Advanced Crisis Communication **
- JRSM 7412 - Analytics and Evaluation **
- JRSM 7414 - Audience Analysis&Segmentation
- JRSM 7416 - Global Strategic Communication **
- JRSM 7422 - Writing for Strategic Media **

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 **
- MIS 7655 - Adv Systems Analysis
- MIS 6681 - Fundamental/Software Testing
- MIS 6682 - Advanced Software Testing

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.

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 **
- NUTR 7001 - Nutraceuticals and Dietary Sup **
- NUTR 7002 - Exer & Nutrition Immunology **

Three additional credit hours will be completed by choosing from the following options:

- NUTR 7003 - Practicum in Sport Nutrition **
- ESMS 7202 - Phys Ex Mtbolc/Cardresp
- HPRO 7780 - Health Counseling **

NOTE: NUTR 7003 consists of credit provided through the Experiential Learning Credit (ELC) program. See 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
- ICL 8720 - STEM Curriculum Leadership

- ICL 7721 - STEM Teacher Development

- ICL 8721 - STEM Teacher Development

- ICL 7722 - Teaching and Learning in STEM
- ICL 8722 - Teaching and Learning in STEM

- ICL 7723 - Equity in STEM Education
- ICL 8723 - Equity in STEM Education

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 Envron/Issue/Ethic **
- PRST 7200 - Globalization/Profsns **
- PRST 7500 - Foundation/Leadership **

One elective from the following (3 hours):

- PRST 7310 - Leadership/Organization **
- UNIV 7111 - Data-Based Decision-making **
- PRST 7700 - Conflict Mgmt/Negotiatn **

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
- SCMS 6620 - Logistics Management
- SCMS 6650 - Supply Management
- SCMS 7313 - Supply Chain Operations Mgmt **

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
- ACCT 7511 - Tax- Partnships/Prtnrs **
- ACCT 7521 - Taxation/Bus Entities

Electives (choose one)

- MIS 7605 - Bus Database Systems **
- MIS 7700 - Fundamentals of Data Analytics
  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.

Teacher Leader Certificate - NOT CURRENTLY ACCEPTING APPLICATIONS

Teacher Leader Certificate

The Teacher Leader Certificate Program at the University of Memphis is designed to prepare practitioners in the field of education to develop leadership skills to support instruction at the school level. This four course certificate can be completed in three semesters. Specific focus will be placed upon developing leadership styles, using data to

improve student learning and developing instructional skills to support colleagues. *Please note that this certificate program does not lead to Tennessee licensure or certification.*

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

Program Requirements

Completion of 12 semester hours distributed as follows:

- ICL 7309 - Dev Instructional Ldrs
- ICL 8309 - Dev Instructional Ldrs

- ICL 7310 - Supptng Cont Spec Inst
- ICL 8310 - Supptng Cont Spec Inst

- ICL 7707 - Using Data to Inform Teaching
- ICL 8707 - Using Data to Inform Teaching

- ICL 7810 - Teacher Leader Practicum
- ICL 8810 - Teacher Leader Practicum

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 apply to graduate from the University Graduate School and a graduate Certification form to the ICL Graduate Office in Ball Hall 215 by the deadline specified by the University Graduate School.

For more information, please contact:

Dr. Annette Cornelius
acornels@memphis.edu
901.678.5093 or 731.425.7993

Teaching English as a Second/Foreign Language Graduate Certificate

Certificate Program (TESL/TEFL)

The TESL/TEFL Graduate Certificate provides training to those interested in teaching English as a Second/ Foreign Language. 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 as a Second/Foreign Language 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, Health and Human Sciences 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 **
- ENGL 7532 - Principles of Skills Assessment **
- ENGL 7535 - ESL Grammar **
- ENGL 7530 - Field Experience and Practicum in ESL **

Three (3) elective hours may be selected from:

- ENGL 7533 - Methods/Techniques of ESL in K-12 **
- ENGL 7536 - Issues in Second Language Writing **
- ENGL 7537 - Issues in Second Language Reading **

- ENGL 7538 - Cultural Issues in ESL **
- ENGL 6533 - ESL/EFL in Multicultural Settings

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 file an Apply to Graduate Card with the Graduate School and 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.

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
- ICL 8701 - Adv Wksp ICL:Urban Educ

- ICL 7702 - Adv Topics in ICL:Urban Educ
- ICL 8702 - Adv Topics in ICL:Urban Educ

- ICL 7706 - Family/Comm Relations
- ICL 8082 - Seminar in Urban Education

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
- AUSP 7003 - Anat Phys Spch Mech
- MUSE 7501 - Vocal Pedagogy 1
- MUSE 7502 - Vocal Pedagogy 2

Electives:

- AUSP 7203 - Voice Disorders
- AUSP 7207 - Clinical Instrumentation

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

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 Inequal or SOCI 7422 Race/Class/Gender.
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):

Humanities Courses:

- COMM 6364 - Gender and Public Discourse
- COMM 6856 - Gender and Film
- ENGL 7451 - Women And Literature

- ENGL 7469 - African American Women Writers **
- HIST 6213 - Women/Gender/Latin Amer
- HIST 6289 - African Women's History
- HIST 6831 - History American Family **
- HIST 6851 - Hist Women In America **
- HIST 6853 - African American Women
- HIST 6863 - Hist Childhood/America **

- HIST 7060 - Women/Gender Historiography
- HIST 8060 - Women/Gender Historiography

- HIST 7061 - Studies Women/Gender Hist **
- HIST 8061 - Studies Women/Gender Hist

- MUHL 6013 - Women And Music
- PHIL 6441 - Recent Continentl Phil
- PHIL 7020 - Seminar Major Figures
- WMST 7320 - Women&Multi-Cultrl Exp

Social Science Courses:

- ANTH 6551 - Culture/Sex/Childbirth
- COUN 7723 - Hum Sexulty Coun/Psyc
- COUN 7751 - Gender Issues In Coun
- COUN 7752 - Coun Gay/Lesbian/Bisexl
- PSYC 7219 - Soc/Persnlty Devel
- SOCI 7212 - Mult Racial Femnst Thry
- SOCI 7410 - Sociology Of Gender
- SOCI 7421 - Racial & Social Inequal
- SOCI 7422 - Race/Class/Gender
- SOCI 7853 - Gender And Health

Other Requirements

1. Students are encouraged to take most of their courses at the 7000 level but up to two courses (6 hours) at the 6000 level are permissible.
2. Because the program is interdisciplinary, at least three (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.

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 / ENGL 8003 - Thry/Prac Tchng Comp
- ENGL 7805 - Foundations of Writing Studies / 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 **
- ENGL 6619 - Web Design/Online Writing **
- ENGL 7001 - Acad Genre and Sch Pub / ENGL 8001 - Acad Genre and Sch Pub
- ENGL 7008 - Thry/Prac Tchng Online ** / ENGL 8008 - Thry/Prac Tchng Online **
- ENGL 7012 - Seminar Health Comm ** / ENGL 8012 - Seminar Health Comm **
- ENGL 7013 - Wkshp Hlth Care Writing ** / ENGL 8013 - Wkshp Hlth Care Writing **
- ENGL 7014 - Wkshp Public Hlth Care Writing ** / ENGL 8014 - Wkshp Public Hlth Care Writing
- ENGL 7350 - Rhetorical Theory / ENGL 8350 - Rhetorical Theory
- ENGL 7801 - History Composition / ENGL 8801 - History Composition
- ENGL 7806 - Resch Meth In Writing / ENGL 8806 - Resch Meth In Writing
- ENGL 7807 - Wksp/Govmt & Corp Wrtg ** / ENGL 8807 - Wksp/Govmt & Corp Wrtg **
- ENGL 7809 - Technical Editing ** / ENGL 8809 - Technical Editing **
- ENGL 7815 - Sem History Rhetoric / ENGL 8815 - Sem History Rhetoric
- ENGL 7818 - Collaborative Writing ** / ENGL 8818 - Collaborative Writing **
- ENGL 7819 - Rhetoric Of Science / ENGL 8819 - Rhetoric Of Science
- ENGL 7820 - Topics In Rhetoric /ENGL 8820 - Topics In Rhetoric
- ENGL 7822 - Cont Comp Theory / ENGL 8822 - Cont Comp Theory
- ENGL 7890 - Topic/Technical Writing /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. Please refer to Undergraduate Catalog for listing of ABM programs.

Graduate Courses

Courses that may be offered online are indicated with (**)asterisks next to the course title.

Accountancy

ACCT 6130 - Intermediate ACCT III **

(3) Advanced topics in financial accounting including leases, pensions, earnings per share, and accounting changes and errors. PREREQUISITE(S): ACCT 3120.

ACCT 6211 - Adv Financial Reporting **

(3) 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 6250 - Accounting Ethics/Regulation **

(3) Foundations of ethics including integrity, objectivity, independence, ethical reasoning, ethical decision-making and ethical dilemmas from the point of view of a professional accountant; legal topics, codes of professional conduct relating to accounting profession and accountancy regulatory bodies; related state and national regulatory requirements. Ethical case studies on topics of professional accounting responsibility. PREREQUISITE(S) or COREQUISITE(S): ACCT 4240

ACCT 6320 - Mgr Decision Making/ACCT **

(3) Evolution of management accounting: functional tools used my 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 7000 - Fundamentals Of Acct

(3) (7001) (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

(3) A survey of the legal, social, and political factors that affect business operations; prerequisite for MBA Core Knowledge and Skills.

ACCT 7050 - Corp Governance/Bus Ethics **

(2) 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.

ACCT 7080 - Financial/Managerial Acct Mgrs **

(3) 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

(3) (7010) (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.

(3) 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 **

(3) Examining fmancial 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

(3) 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 **

(3) 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 7241 - Internal Auditing **

(3) Authoritative internal audit standards, ethics of internal auditors, techniques of efficiency and effectiveness audits. PREREQUISITE(S): ACCT 4240.

ACCT 7242 - Advanced Auditing **

(3) (0551)(6241). 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

(3) 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 7320 - Controllership

(3) 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 7412 - Legal/Acctg Aspects Entrep

(3) 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

(3) 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

(3) 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- Partnships/Prtnrs **

(3) 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

(3) 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

(3) 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

(3) 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

(3) (6520). Introduction to the federal income taxation of corporations, partnerships, estates, and trusts. PREPREQUISITE: ACCT 3510 or permission of instructor. PREREQUISITE(S): ACCT 3510 or permission of instructor.

ACCT 7610 - Acct Issues/Servc Econ

(3) 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 - Financial Report/Audit Stand **

(3) 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 - Regulatory/Business Envrnmnt **

(3) 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

(1-3) 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

(1-6) 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

(1-3) Varied topics. May be repeated with change in topic PREREQUISITE(S): Permission of Faculty Director.

ACCT 7921 - Special Topics in Accountancy

(1-3) Varied topics. May be repeated with change in topic PREREQUISITE(S): Permission of Faculty Director.

ACCT 7996 - Thesis

(3-6) Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

ACCT 8000 - Indep Accounting Research

(1-6) Examination of research issues, opportunities and challenges in accounting as related to a studentâ€™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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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.

ACCT 8740 - Introductory Research Seminar

(3) 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

(1-12) 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 **

(3) (5700) 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

(3) (5701) 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 **

(3) (5703) 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 **

(3) (5705) 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

(3) (5706) Analysis of theoretical and research support for selected models of instruction; emphasis on teaching applications.

ASTL 7709 - Action Research **

(3) 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 **

(3) (5721) 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 **

(3) (5723) 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 **

(3) (5725) 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 **

(3) (5726) 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 **

(3) (5729) 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 **

(3) 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

(3) 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

(3) 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

(3) 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

(3) (Same as ESCI 6270) 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

(3) Intensive ethnological study of various prehistoric cultures from earliest times until historic contact.

ANTH 6325 - Archaeol Fld/Lab Techn

(3) (Same as ESCI 6325) 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

(3) (Same as ESCI 6335). 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

(3) (Same as ESCI 6350) 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

(3) 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

(3) 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

(3) 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 **

(3) 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

(3) 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

3 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 **

(3) (Same as ARTH 6660) Museum collection theory and methods, including collection policy, development, preservation, documentation, and interpretation. PREREQUISITE(S): Permission of instructor

ANTH 6661 - Collections Research

(3) (Same as ARTH 6661) 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

(3) (Same as ARTH 6662) Museum exhibition methods and theory, including research, design, layout, object selection and handling, installation,

public programing, and evaluation. PREREQUISITE(S): Permission of instructor

ANTH 6680 - Applied Archaeology/Museums

(3) (Same as ESCI 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.

ANTH 6990-6999 - Special Topics in Anthropology **

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) This course surveys the history, ethics, and methods of applied anthropology. It also reviews 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 knowledge to relevant human problems, including social inequality, environmental justice, and health disparities, and the distinctions between applied, engaged, practicing, public, action and activist anthropology.

ANTH 7411 - Urban Anthropology in Mid-South

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 **

(3) (Same as ARTH 7661) Museum administration, finance, collection management, conservation, education, exhibition design, marketing, and visitor services. PREREQUISITE(S): Permission of instructor.

ANTH 7662 - Museums & Communities **

(3) (Same as ARTH 7662) History and theory of museums, governance, audiences, and current topics in the profession. PREREQUISITE(S): Permission of instructor.

ANTH 7669 - Museum Internship **

(3-6) (Same as ARTH 7669) 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

(3) 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

(1-3) 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

(1-3) 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

(1-3) 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

(1-6) 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

(4) 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

(4) 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

(3) 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

(3) 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 Epidemiolgy

(3) 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

(1-3) 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

(1-3) 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

(1-2) Study and performance of selected orchestral excerpts suitable for auditions.

MUAP 6111 - Applied Music Trumpet

(1-2)

MUAP 6121 - Horn

(1-2)

MUAP 6131 - Trombone

(1-2)

MUAP 6141 - Tuba

(1-2)

MUAP 6142 - Euphonium

(1-2)

MUAP 6260-6269 - Special Topics in Applied Music

(1-3) Selected topics in Applied Music. May be repeated with change of topics.

MUAP 6301 - Acting for Opera I

(3) Essential acting techniques for singers, with special attention to application to operatic stage.

MUAP 6302 - Acting for Opera II

(3) Advanced acting techniques for singers, with special attention to application to operatic stage.

MUAP 6311 - Piano

(1-2)

MUAP 6321 - Harpsichord

(1-2)

MUAP 6331 - Organ

(1-2)

MUAP 6411 - Percussion

(1-2)

MUAP 6414 - Ethnic Percussion

(1-2)

MUAP 6511 - Violin

(1-2)

MUAP 6512 - Baroque Violin

(1-2)

MUAP 6521 - Viola

(1-2)

MUAP 6531 - Cello

(1-2)

MUAP 6541 - Bass

(1-2)

MUAP 6551 - Guitar

(1-2)

MUAP 6561 - Harp

(1-2)

MUAP 6571 - Viola da Gamba

(2) Applied Lessons in Viola da Gamba.

MUAP 6611 - Voice

(1-2)

MUAP 6711 - Flute

(1-2)

MUAP 6721 - Oboe

(1-2)

MUAP 6731 - Clarinet

(1-2)

MUAP 6731 - Clarinet

(1)

MUAP 6741 - Saxophone

(1-2)

MUAP 6751 - Bassoon

(1-2)

MUAP 6761 - Recorder

(1-2)

MUAP 7002 - Chamber Music (1)

MUAP 7099 - Chamber Music Recital

(1) Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

MUAP 7101 - Wind Ensemble

(1)

MUAP 7102 - Orchestra

(1)

MUAP 7103 - University Singers

(1)

MUAP 7104 - Opera Chorus

(1)

MUAP 7106 - Symphonic Band

(1)

MUAP 7107 - Jazz Ensemble

(1)

MUAP 7108 - Opera Workshop

(1)

MUAP 7111 - Trumpet

(2-6)

MUAP 7121 - Horn

(2-6)

MUAP 7131 - Trombone

(2-6)

MUAP 7141 - Tuba

(2-6)

MUAP 7142 - Euphonium

(2-6)

MUAP 7201 - Brass Ensemble

(1)

MUAP 7202 - Jazz Combo

(1)

MUAP 7203 - Chamber Music/Piano

(1)

MUAP 7204 - Percussion Ensemble

(1)

MUAP 7205 - Contmp Chamber Players

(1)

MUAP 7207 - String Ensemble

(1)

MUAP 7209 - Chamber Choir

(1)

MUAP 7210 - Opera Soloists

(1)

MUAP 7211 - Woodwind Ensemble

(1)

MUAP 7212 - Collegium Musicum

(1)

MUAP 7213 - Jazz Vocal Ensemble

(1)

MUAP 7214 - Tuba Ensemble

(1)

MUAP 7215 - Trumpet Ensemble

(1)

MUAP 7260-7289 - Special Topics in Applied Music

(1-3) Selected topics in Applied Music. May be repeated with change of topic.

MUAP 7311 - Piano

(2-6)

MUAP 7321 - Harpsichord

(2-6)

MUAP 7331 - Organ

(2-6)

MUAP 7411 - Percussion

(2-6)

MUAP 7506 - Trombone Ensemble

(1)

MUAP 7511 - Violin

(2-6)

MUAP 7521 - Viola

(2-6)

MUAP 7531 - Cello

(2-6)

MUAP 7541 - Bass

(2-6)

MUAP 7551 - Guitar

(2-6)

MUAP 7561 - Harp

(2-6)

MUAP 7600 - Experiential Learning Credit

(1-9) A systematic process for evaluating and credentialing graduate-level learning gained in a variety of contexts. Credit determined by faculty assessor.

MUAP 7611 - Voice

(2-6)

MUAP 7620 - Ind Study Sym/Op Cond

(3) 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

(3) 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

(1-3) 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

(1-3) 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

(2-6) 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

(1-3) Supervised rehearsal and preparation of a public performance with a large ensemble.

MUAP 7703 - Score Study/Aural Train

(2) Skills of score reading, ear training, and score analysis for conductors.

MUAP 7704 - Opera Stage Direction

(1-3) 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

(1-3) 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

(2-6)

MUAP 7721 - Oboe

(2-6)

MUAP 7731 - Clarinet

(2-6)

MUAP 7741 - Saxophone

(2-6)

MUAP 7751 - Bassoon

(2-6)

MUAP 7800 - Internship/Music Perform

(1-6) 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

(1-3) 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

(3) 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

(1-3) 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

(1-3) 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

(3) 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

(2-6)

MUAP 8121 - Horn

(2-6)

MUAP 8131 - Trombone

(2-6)

MUAP 8141 - Tuba

(2-6)

MUAP 8142 - Euphonium

(2-6)

MUAP 8260-8289 - Special Topics in Applied Music

(1-3) Selected topics in Applied Music. May be repeated with change of topic.

MUAP 8311 - Piano

(2-6)

MUAP 8321 - Harpsichord

(2-6)

MUAP 8331 - Organ

(2-6)

MUAP 8411 - Percussion

(2-6)

MUAP 8511 - Violin

(2-6)

MUAP 8521 - Viola

(2-6)

MUAP 8531 - Cello

(2-6)

MUAP 8541 - Bass

(2-6)

MUAP 8551 - Guitar

(2-6)

MUAP 8600 - Experiential Learning Credit

(1-9) A systematic process for evaluating and credentialing graduate-level learning gained in a variety of contexts. Credit determined by faculty assessor.

MUAP 8611 - Voice

(2-6)

MUAP 8620 - Ind Study Sym/Op Cond

(3) 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

(3) 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

(2-6) 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

(1-3) Supervised rehearsal and preparation of a public performance with a large ensemble.

MUAP 8703 - Score Study/Aural Train

(2) Skills of score reading, ear training, and score analysis for conductors.

MUAP 8711 - Flute

(2-6)

MUAP 8721 - Oboe

(2-6)

MUAP 8731 - Clarinet

(2-6) COREQUISITE(S): JOUR 4629. Permission of Department required for registration.

MUAP 8731 - Clarinet

(2-6)

MUAP 8741 - Saxophone

(2-6)

MUAP 8751 - Bassoon

(2-6)

MUAP 8800 - Internship/Music Perform

(1-6) 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

(1-3) 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

(3) 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

(1-3) 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

(1-9) Preparation of the research document as part of the dissertation equivalent; may include a lecture recital. All policies relating to dissertations are applicable to the course. Continuous enrollment is required until degree is completed. Grades of S, U, or IP will be given.

Architecture

ARCH 6021 - Architecture Independent Study

(1-3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(1-6) 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

(3) 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 6613 - Advanced Visual Communication

(3) Advanced design, modeling, and analytical concepts using various computer software programs. PREREQUISITE(S): Permission of instructor.

ARCH 6811 - Parameters in Architecture Studio

(3-6) 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

(4) 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

(6) 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

(6) 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

(3-6) 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

(3-6) 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

(1-6) 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

(3) 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

(3-9) 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

(3) 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. COREQUISITE: ARCH 7711. COREQUISITE(S): ARCH 7711.

ARCH 7012 - Advanced Design Seminar 2

(3) 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; COREQUISITE(S): ARCH 7712.

ARCH 7013 - Advanced Design Seminar 3

(3) Offered in conjunction with advanced studio problems in architecture; changing topics address a variety of critical and ideological constructs; emphasizes comprehensive design. COREREQUISITE: ARCH 7713. COREQUISITE(S): ARCH 7713.

ARCH 7021 - Architecture Independent Study

(1-3) 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

(1-3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(1-6) 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

(3) 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 repsonsibilities. PREREQUISITE(S): permission of instructor.

ARCH 7511 - Urban Design Strategies Semn

(3)

ARCH 7512 - Urbanism/Suburban Rev Studio

(6)

ARCH 7711 - Advanced Design Studio 1

(6) 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

(6) 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

(6) 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

(3) 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

(3) 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 7995 - Professional Project Studio

(6) 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

(1-6) 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

(1-3) 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

(1-3) 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

(3) 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

(3) 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 6221 - Graphic Dsgn/Print Comm

(3) Practical problems in the areas of publication, information, corporate, and promotional design. PREREQUISITE(S): ART 3213 and 3222 or permission of instructor.

ART 6224 - History Graphic Design

(3) 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

(3) 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

(3) An advanced course in drawing and painting methods with emphasis on transparent watercolor.

ART 6322 - Drawng & Paintng II

(3) A continuation of Art 6321 with attention given to various mixed media.

ART 6331 - Painting III

(3) 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

(3) A continuation of Art 6331 with emphasis on development of a personal style.

ART 6333 - Painting V

(3) Continuation of ART 6332; emphasis on development of personal style. PREREQUISITE(S): ART 6332 or permission of instructor.

ART 6351 - Adv Printmaking I

(3) Specialization in one or two printmaking media with emphasis on development of personal imagery and technical skills.

ART 6352 - Adv Printmaking II

(3) 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

(3) 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

(1-3) 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. May be repeated to a maximum of 6 hours PREREQUISITE(S): ART 6353 or permission of instructor.

ART 6410 - Art Educ Independ Study

(1-3) Theoretical and pragmatic ideas relevant to teaching of art. May be repeated for a maximum of 6 credit hours. May be repeated for a maximum of 6 credit hours.

ART 6440 - Analysis of Teaching

(4) Advanced methods for art teaching practices in schools. PREREQUISITE(S): admission to TEP.

ART 6511 - Sculpture IV

(3) Advanced work in various sculptural media.

ART 6512 - Sculpture V

(3) A continuation of ART 6511 with emphasis on personal expression.

ART 6521 - Ceramics III

(3) Introduction to pottery-making, including hand forming and production processes using clays, plaster, and cements.

ART 6560 - Interactive Media Design

(3) 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

(1-3) Specific art problems as they apply to individual student; emphasis on basic art concepts and creative experience.

ART 6622 - Workshop In Art II

(1-3) Continuation of ART 6621, providing study of problems appropriate to needs of individual student.

ART 6641 - Study & Travel Art

(3-6) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(9) Implementing various methodologies, assessing students, classroom management,and classroom discipline. PREREQUISITE(S): admission to TEP.

ART 6914 - Art Education Residency I

(5) Implementing various methodologies, assessing students, classroom management, and classroom discipline. PREREQUISITE(S): admission to TEP.

ART 7010-7019 - Special Topics in Studio Art

(1-3) 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

(1-3) 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

(3) 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. May be repeated for maximum of 12 hours when topics vary Grades of A-F, or IP will be given.

ART 7200 - Photography Seminar

(3) 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. May be repeated for a maximum of 6 hours.

ART 7201 - Adv Research Phtgrphy

(3) Independent work and research in photography. May be repeated for a maximum of 9 credit hours. 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

(3) 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

(1-12) 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. 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

(3) 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. NOTE: May include field experience and background check at student's expense.

ART 7420 - Meth K-12 Art Instruct

(2) Instructional planning, implementation, and evaluation applied to elementary and secondary school art programs.

ART 7421 - Positive Yth Devlp thru Arts

(3) 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

(3) 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. NOTE: May require fieldwork and background check at student's expense PREREQUISITE(S): Permission of instructor.

ART 7441 - Art Educ Prof Seminar

(3) 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

(1-12) 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. 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

(3) Advanced techniques and principles of visual communication in the video animation format. PREREQUISITE(S): permission of instructor.

ART 7651 - Graduate Studio Sem

(1) 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. 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

(1-12) 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. 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

(3) 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. 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

(3) (6711) (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

(3) (6712) (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

(1-12) 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. 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

(1-6) 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.

ART 8010-8019 - Special Topics in Studio Art

(1-3) Topics are varied and announced in online class listings. May be repeated for a maximum of 9 credit hours when topics varies.

ART 8020-8029 - Special Topics in Art Education

(1-3) Topics are varied and announced in online class listings. May be repeated for a maximum of 9 credit hours when topics varies.

ART 8201 - Adv Research Phtgrphy

(3) Independent work and research in photography. May be repeated for a maximum of 9 credit hours. 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

(1-12) 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. 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

(1-12) 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. 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

(1-12) 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. 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

(1-3) 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

(3) Pre-dynastic to Late Period.

ARTH 6112 - Egypt Art-Old Kingdom

(3) Art, architecture, and archaeology, 3000-1500 BC.

ARTH 6113 - Egypt Art-New Kingdom

(3) Art, architecture, and archaeology, 1500 BC. to 642 AD.

ARTH 6119 - Late Antique/Islamic Art/Egypt

(3) Pharaonic and Hellensitic 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

(3) Architecture, sculpture, painting, and the minor arts in Mesopotamia, Anatolia, and Syria-Palestine.

ARTH 6123 - Greek Art

(3) Architecture, sculpture, and painting from the Bronze Age to the end of the Hellenistic period.

ARTH 6124 - Roman Art

(3) Architecture, sculpture, and painting from Etruscan Rome to the fall of the Empire.

ARTH 6125 - Art/Archaeology Pompeii

(3) Pompeii's excavations, art, artifacts, and architecture in reconstructing ancient Roman daily life.

ARTH 6129 - Ancient/Medieval Arch

(3) Selected topics comparing the architecture of ancient Egypt, the Classical world, and Medieval Europe.

ARTH 6130 - Art/Medieval World

(3) Architecture, sculpture, and painting, including manuscript illumination, of the Middle Ages; includes Western European and Byzantine traditions.

ARTH 6131 - Art/Early Middle Ages

(3) Advanced study of the architecture, sculpture, and painting of early medieval period.

ARTH 6134 - Art/High Middle Ages

(3) Advanced study of the architecture, sculpture, and painting, including manuscript illumination, stained glass, and ivories, of Romanesque and Gothic periods.

ARTH 6141 - Early Renaissance Italy

(3) Survey of the architecture, sculpture, and painting of Italy, 1300-1510.

ARTH 6142 - North Renaissance Art

(3) Fifteenth century art in Northern Europe with emphasis on panel painting, manuscript illumination, and printmaking.

ARTH 6143 - High Renaissance Italy

(3) Sixteenth century art in Italy, highlighting the works of Michelangelo, Raphael, Titian, and the Mannerists.

ARTH 6146 - Baroque Art

(3) Historical study of the architecture, sculpture, and painting produced in Europe during the seventeenth century.

ARTH 6148 - Neo-Class/Romanticism

(3) Western European art, ca. 1760-1850, emphasizing painting, sculpture, and art theory. PREREQUISITE(S): ARTH 2102 or permission of instructor.

ARTH 6149 - Realism & Impressionism

(3) Western European art, ca. 1850-1880, emphasizing painting, sculpture, and art theory. PREREQUISITE(S): ARTH 2102 or permission of instructor.

ARTH 6152 - Early Modern Art

(3) Movements in Western art and art theory, 1880-1905, that are the foundation of 20th century modernism, especially Symbolism and Post-Impressionism. PREREQUISITE(S): ARTH 2102 or permission of instructor.

ARTH 6153 - Cubism Thru Surrealism

(3) 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 - High Modern Art

(3) American and European art and art theory, emphasizing the development of modernism. PREREQUISITE(S): ARTH 2102 or permission of instructor.

ARTH 6157 - Contemp Art/Theory/Crit

(3) Historical movements, theory, and criticism from 1968 to the present. PREREQUISITE(S): ARTH 2102 or permission of instructor.

ARTH 6158 - Modern Architecture

(3) 19th century styles, 20th century masters, contemporary developments in architecture, including historic preservation.

ARTH 6160 - Architecture & Nature

(3) 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

(3) Hispanic arts of the Americas from 1500 to the present, considered in relation to Iberian and Indian traditions.

ARTH 6163 - Pre-Columbian Art

(3) 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

(3) (6167, 6168) (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 6167 - American Art, 1860-1945

(3) This course provides an in-depth look at art and visual culture produced in the United States between two defining conflicts in U.S. history: the Civil War and World War II-a period of dynamic developments related to technology, race, ethnicity, and gender, among a host of other areas. It approaches the issue of defining a national art from multiple perspectives, including dominant and marginalized voices.

ARTH 6168 - Art and Social Conflict 1920-P

(3) 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 - Arts Africa/Oceania/Na

(3) Survey of arts created by Native Americans of US and Canada, peoples of sub-Saharan Africa, and Pacific islands, examined in relation to their cultural context and heritage.

ARTH 6183 - Visual Arts Of Africa

(3) Survey of arts of African continent from pre-historic to modern eras; African aesthetic traditions examined in relation to social and cultural contexts.

ARTH 6184 - Arts of Colonialism/Empire

3 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 6185 - African American Art

(3) Introduction to African American visual expression and culture from Colonial to modern eras, covering fine arts, photography, film, and popular culture.

ARTH 6186 - Afr American Diaspora Cinema

(3) 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 6187 - Af Am Diaspora Photo Culture

(3) African American photographic experience from the 19th century to the presient time; exploration of the politics of representation in the history of American photography by examining blacks as subjects, creators, and theorists of a diverse range of visual texts"; daguerreotypes

ARTH 6381 - Art Curatorial Tech

(3) 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 **

(3) (Same as ANTH 6660) Museum collection theory and methods, including collection policy, development, preservation, documentation, and interpretation. PREREQUISITE(S): Permission of instructor.

ARTH 6661 - Collections Research

(3) (Same as ANTH 6661) 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 **

(3) (Same as ANTH 6662) Museum exhibition methods and theory, including research, design, layout, object selection and handling, installation, public programing, and evaluation. PREREQUISITE(S): Permission of instructor.

ARTH 6721 - History Photography I

(3) Survey of the history and theory of photography since its invention in the 19th century.

ARTH 6722 - History Photography II

(3) Historical and critical issues in photography from World War I to present.

ARTH 7000 - Semn Art/Vis Cult Afr/Afr Dias

(3) 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

3 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

3 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

3 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

(1-3) 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

(3) 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

(3) 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

(3) Grammar and translation of hieroglyphs.

ARTH 7116 - Middle Egyptian II

(3) Readings in hieroglyphs PREREQUISITE(S): ARTH 7115 or equivalent.

ARTH 7117 - Middle Egyptian Lit

(3) Readings and translations of major literature of Ancient Egypt. PREREQUISITE(S): ARTH 7116 or equivalent.

ARTH 7118 - Egyptian Texts

(3) Advanced readings and translations of ancient Egyptian texts. PREREQUISITE(S): ARTH 7116 OR equivalent.

ARTH 7119 - Late Egyptian

(3) Readings in literature and other texts. PREREQUISITE(S): ARTH 7116 or equivalent.

ARTH 7120 - Grad Prob Medieval Art

(3) 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

(3) 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

(3) Reading of select egyptian texts written in hieratic. PREREQUISITE(S): ARTH 7119 or equivalent.

ARTH 7125 - Egyptian Art & Arch

(3) 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

(3) History of the discipline along with current research methods. Students develop research presentations in oral and written formats.

ARTH 7140 - Grad Prob Renaissance

(3) 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

(3) 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

(3) 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

(3) 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

(3-9) 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 **

(3) (Same as ANTH 7661) Museum administration, finance, collection management, conservation, education, exhibition design, marketing, and visitor services. PREREQUISITE(S): Permission of instructor.

ARTH 7662 - Museums & Communities **

(3) (Same as ANTH 7662) History and theory of museums, governance, audiences, and current topics in the profession. PREREQUISITE(S): Permission of instructor.

ARTH 7669 - Museum Internship **

(3-6) (Same as ANTH 7669) 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

(3-6) 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 acadmic advisor or instructor.

ARTH 7996 - Thesis

(1-6) 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

(3) 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

(3) 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

(3) 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

(3) 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

(1-3) 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

(3) 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

(3) 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

(3) 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

(3) History of the discipline along with current research methods. Students develop research presentations in oral and written formats.

ARTH 8140 - Grad Prob Renaissance

(3) 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

(3) 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

(3) 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

(3) 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

(3-9) 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.

Bioinformatics

BINF 7092 - Research

(1-3) 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 - Special Topics in Bioinformatics

(3) PREREQUISITE(S): permission of instructor.

BINF 7701 - Adv. Genomics & Bioinformatics

(3) 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

(1) 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

(1) Current research topics in Bioinformatics. One class is required to meet degree requirements. PREREQUISITE(S): Permission of Instructor.

BINF 7991 - Bioinformatics Internship

(1-3) 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

(3) 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

(1-6) 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

(2) 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

(3) 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

(4) 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

(4) 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

(3) 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

(4) 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

3 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

(3) 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

(1-3) Topics are varied and announced in Online course listings; may be repeated with different topics for a maximum of 4 hours

BIOL 6100 - Evolution

(3) 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

(3) (MMCS 6150) (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 6230 - Plant Physiology

(3) 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

(3) (Same as ESCI 6241) (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

(4) 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

(4) (MMCS 4375) (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

3 (MMCS 6380) (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

(3) (MMCS 6400) (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

(3) (MMCS 4440) (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

(3) (MMCS 6445) (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

(3) (MMCS 6450) (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

(2) (MMCS 6465) (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

(3) (MMCS 6470) (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

(3) 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

(3) 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

(3) (MMCS 6501) (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

(2) (MMCS 6503) (Same as CHEM 6501) (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

(2) (MMCS 6504) (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

(3) (MMCS 4511) (Same as CHEM 4511) 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

(3) (MMCS 6512) (Same as CHEM 6512) (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

(4) Animal behavior, primarily from ecological, physiological, developmental, and evolutionary perspective. Three lecture, two laboratory hours per week. PREREQUISITE(S): BIOL 1120 and 1121.

BIOL 6630 - Gen Endocrinology

(3) 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

(3) 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

(4) 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

(4-6) 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

(3) 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

(4) 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

(4) 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

(3) 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

(3) 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

(3) 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

(2) 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

(5) 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

(3) 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

(2) 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

(3) 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

(3) 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

(3) 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

(6) 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

(4) 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

(2) 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

(1) (MMCS 7004-8004) (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

(2) (MMCS 7006-8006) (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

(4) (MMCS 7010) (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

(3) (Same as BINF 7701) (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

(3) 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

(3) 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

(3) 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

(3) (MMCS 7003-8003) (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

(3) 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

(3) 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

(1-3) 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

(1-3) 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

(1-3) 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

(1-3) 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/Appl

(3) (BIOM 7030-8030) (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

(3) (MMCS 7031-8031) (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

(4) (MMCS 7040-8040) (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 Cultr Tech

(3) (MMCS 7051-8051) (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 7080 - Public Health Microbiol

(3) 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

(1-6) 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

(3-6) 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

(2) 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 7130 - Curr Lit Cell & Molec Biol

(1) 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

(4) (MMCS 7131-8131) (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

(3) 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

(3) 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

(1) 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

(4) 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

(3) (MMCS 7290-8290) (Same as COMP 7290-COMP 8290) (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

(2) (MMCS 7331-8331) (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

(3) 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

(3) 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

(3) 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

(3) 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.

BIOL 7350 - Evolutionary Ecology

(3) 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

(3) 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

(3) 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

(3) (MMCS 7400-8400) (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

(3) 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

(4) (MMCS 7464-8464) (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

(3) (MMCS 7470-8470) (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

1-3 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

(3) (MMCS 7530-8530) (MMCS 7530-8530). Bacterial physiology including growth, nutrition, biosynthesis, biodegradation, and adaptation. Three lecture hours per week.

BIOL 7550 - Food & Indust Toxicol

(3) (MMCS 7550-8550) (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

(1) 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

(2) 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

(1-4) Current topics of special interest in biology PREREQUISITE(S): Permission of instructor.

BIOL 7750 - Population Ecology

(3) 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

(4) 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

(3) 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

(1-6) 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

(2) 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

(1) (MMCS 7004-8004) (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

(2) (MMCS 7006-8006) (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 Tchr

(4) (MMCS 7010) (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

(3) 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

(3) 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

(3) 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

(3) (MMCS 7003-8003) (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

(3) Principles and procedures related to the culture of commercially important freshwater organisms under controlled conditions

BIOL 8015 - Aquaculture

(3) 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

(3) 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

(1-3) 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

(1-3) 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

(1-3) 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

(1-3) 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/Appl

(3) (BIOM 7030-8030) (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

(3) (MMCS 7031-8031) (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

(4) (MMCS 7040-8040) (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. PREREQUISITE(S): Permission of instructor.

BIOL 8051 - Vertebrate Cell Cultr Tech

(3) (MMCS 7051-8051) (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 8080 - Public Health Microbiol

(3) 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

(1-6) 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

(3) (MMCS 8100) (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 8130 - Curr Lit Cell & Molec Biol

(1) 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

(4) (MMCS 7131-8131) (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

(3) 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

(3) 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

(1) 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

(4) 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

(3) (MMCS 7290-8290) (Same as COMP 7290-COMP 8290) (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

(2) (MMCS 7331-8331) (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

(3) 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

(3) 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

(3) 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

(3) 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.

BIOL 8350 - Evolutionary Ecology

(3) 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

(3) 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 3230 or equivalent), plant ecology (BIOL 4053-BIOL 6053 or equivalent), or permission of instructor.

BIOL 8370 - Wetland Ecol & Mgmt

(3) 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

(3) (MMCS 7400-8400) (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

(3) 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

(4) (MMCS 7464-8464) (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

(3) (MMCS 7470-8470) (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

1-3 Not Applicable 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

(3) (MMCS 7530-8530) (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

(3) (MMCS 7550-8550) (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

(1) 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

(2) 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

(1-4) Current topics of special interest in biology PREREQUISITE(S): Permission of instructor.

BIOL 8750 - Population Ecology

(3) 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

(4) 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

(3) 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

(1-10) 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

(3) 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

(3) 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

(4) Measurement techniques, recognition processes; application of chemical sensors and biosensors for analysis of real samples.

BIOM 6210 - Research Studies

(1-3) 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

(3) (Same as MECH 4393) (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

(3) Biochemical and biophysical measurement techniques; light spectroscopy, gel exclusion and affinity chromatography, electrophoresis, ELISA, protein and DNA methods. 6 hours lab.

BIOM 6720 - Bioelectricity

(4) Biolelectricity, 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

(4) (3750) (3750). 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.

BIOM 6900-6919 - Special Topics in Biomedical Engineering I

(1-3) Topics are varied and are announced in the online class listings.

BIOM 7004 - Life Sciences Biom I

(3) 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

(3) 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/Appl

(3) (BIOL 7030-8030) (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

(3) 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

(3) 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 - Physlgcl Control Sys

(3) 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

(3) 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

(3) 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

(3) 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

(3) Introduction to electrical propagation through human tissue; membrane biophysics, action potentials, subthreshold stimuli, electrophysiology of heart, and neuromuscular junction.

BIOM 7209 - Biom Msrmnt/Instrmnt

(3) Measurement techniques applicable in biomedical engineering; data acquisition system, mechanical instrumentation, interface systems, signal analyses; biocompatibility requirements.

BIOM 7222 - Biosensors

(3) 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

(1) 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

(1) 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 - Mvmnt/Jnt/ImpInt Mech

(3) The course consists of the following sections; muscle and bone anthoropometry; 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

(3) 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.

BIOM 7313 - Biomechanics II

(3) Modern development of biomechanics at advanced mathematical level; dynamics of the lung, blood flow, microcirculation, and muscle mechanics.

BIOM 7331 - Advnces Orthopedic Biom

(3) The course consists of a sequence of lectures devoted to special topics including: biomechanical analysis and function of upper extremity, lower extremity, and spine joint systems of the human body; and fracture healing and bone remodeling, bone regeneration, function of cartilage, and biomechanics of tendon, ligament, and meniscus.

BIOM 7408 - Biochemical Engineering

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3)

BIOM 7721 - Clin/Indust Intern BME

(3) 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

(1-12) 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

(3) 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

(1-3) 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

(1-3) Topics are varied and announced in online class listings.

BIOM 7991 - Project I

(1-3) 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

(1-3) 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

(1-12) Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

BIOM 8004 - Life Sciences Biom I

(3) 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

(3) 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/Appl

(3) (BIOL 7030-8030) (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

(3) 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

(3) 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 - Physlgcl Control Sys

(3) 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

(3) 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

(3) 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

(3) 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

(3) Introduction to electrical propagation through human tissue; membrane biophysics, action potentials, subthreshold stimuli, electrophysiology of heart, and neuromuscular junction.

BIOM 8209 - Biom Msrmnt/Instrmnt

(3) Measurement techniques applicable in biomedical engineering; data acquisition system, mechanical instrumentation, interface systems, signal analyses; biocompatibility requirements.

BIOM 8222 - Biosensors

(3) 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

(1) 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

(1) 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

(3) The course consists of the following sections; muscle and bone anthoropometry; 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

(3) 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

(3) Modern development of biomechanics at advanced mathematical level; dynamics of the lung, blood flow, microcirculation, and muscle mechanics.

BIOM 8331 - Advnces Orthopedic Biom

(3) The course consists of a sequence of lectures devoted to special topics including: biomechanical analysis and function of upper extremity, lower extremity, and spine joint systems of the human body; and fracture healing and bone remodeling, bone regeneration, function of cartilage, and biomechanics of tendon, ligament, and meniscus.

BIOM 8408 - Biochemical Engineering

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3)

BIOM 8710 - Integrity-Conduct of Sci Res

(3) 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

(3) 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

(1-12) 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

(3) 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

(1-3) 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

(1-3) Topics are varied and announced in online class listings.

BIOM 8991 - Project I

(1-3) 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

(1-3) 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

(1-12) Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

Business Administration

BA 7501 - Leadership & Negotiation

3 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

3 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

3 This course examines the impact of economic, social, cultural, political, legal and environmental influences on business. Topic areas change each semester as determined my new developments in business. PREREQUISITE(S): Permission of associate dean for academic programs.

BA 7634 - Hlthcare Exec Leadership Skill

(3) HADM 7634 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 premit only.

BA 7651 - Health Systems Pharmacy Mgmt

(3) 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 - Special Topics in Business Administration

(3) 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 7719 - Special Topics in Business Administration

(1-6)

BA 7750 - Surv Internatl Business

(3) 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

(1) 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

(1) 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

(1)

BA 7910 - Problems Intl Bus

(1) 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

(1) 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 - Practicum Intl Business

(3) Practicum in foreign business or academic organization to gain management skills and experience; work experience in non-English speaking country; enrollment must be approved by the Associate Dean for Academic Programs. PREREQUISITE(S): 12 hours of graduate business courses.

BA 7960 - Pharm Exec Innovation Project

(3) A longitudinal project based on a practical health-system pharmacy problem currently faced by the studentâ€™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

(1) 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

(1) 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

(1) 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

(1)

BA 8920 - Dissertation Seminar

(1) 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

(6 to 18) 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

(3) 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

(3) 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

(3) 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

(3) Computer-based project management tools and project management leadership roles and techniques.

MIS 6681 - Fundamental/Software Testing

(3) Software testing objectives, planning, techniques, and organizational options. Manual and automated software testing techniques and test case generation methodologies.

MIS 6682 - Advanced Software Testing

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3)

MIS 7480 - Thriving In Info Age

(3) 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 **

(3) 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 **

(3) 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

(3) 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 **

(3) 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

(3) 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 modal. 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 - Informatn Systms Proj

(3) 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 - Inform Sys Mgmt/Plan

(3) 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 - Info Syst Global Enterprise **

(3) 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 - Adv Systems Analysis

(3) 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

(3) 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 - Adv Business Compt Envn

(3) 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

(3) 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 **

(3) 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

(3) Descriptive States; 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 - Lest Squares and Confidence Intervals

MIS 7710 - Web Analytics

(3) 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

(3) 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

(1-6) 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

(3-6) Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

MIS 8465 - Inform Sys In Organiztns

(3) 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

(1-3)

MIS 8605 - Bus Database Systems

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 modal. 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 Systms I

(3) 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 Systms II

(3) 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

(3) 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

(3) 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

(1-6) 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

(3) (ESCI 7020-29-8020-29)

CERI 7102 - Programming Tools

(3) (Same as CIVL 7002/CIVL 8002) (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 programing. Three lecture hours per week. Three lecture hours per week. PREREQUISITE(S): Permission of the instructor.

CERI 7104 - Data Analysis in Geophysics

(3) (ESCI 7205) (same as CIVL 7126) 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

(3) (ESCI 7401) (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

(3) (GEOP 7602; GEOL 7358; ESCI 7602; CIVL 7127) (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

(3) (Same as CIVL 7125-CIVL 8125) (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

(3) (same as CIVL 7001/CIVL 8001) (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

(3) (Same as CIVL 7136; same as ESCI 7204) (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

(3) 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

(3) 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

(4) (ESCI 7404) (ESCI 7230-ESCI 8230) 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

(3) (Same as ESCI 7240/ESCI 8240) (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 obtained through field work.

CERI 7244 - Regional Geop Synthesis

(3) (GEOP 7112; ESCI 7112) (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

(3) (GEOP 7603; ESCI 7603; CIVL 7128) (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

(3) 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 7280 - Seismotectonics

(3) 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

(3) (GEOL 7315-8315; ESCI 7315-8315) 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 7353 - Geodynamics

(3) (Same as ESCI 7353) (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 mantel convection, solidification of magmas, mechanical behavior of faults, and subsidence of sedimentary basins. PREREQUISITE(S): Permission of instructor.

CERI 7355 - Appls Space-Base Geodesy

(3) (GEOP 7355; ESCI 7355) (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 earthâ€™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

(3) (GEOP 7376; ESCI 7375) (Same as MATH 7375) (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

(3) (GEOP 7376; ESCI 7376) (Same as MATH 7376, MATH 7376) (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

(3) (GEOP 7402; ESCI 7402) (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

(3) (GEOP 7403; ESCI 7403-8403) (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

(3) (ESCI 7405-8405) (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

(1-3) 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

(3) (GEOL 7641, GEOP 7701, ESCI 7701). (GEOL 7641, GEOP 7701, ESCI 7701).

CERI 7702 - Seminar in Seismology

(3) (GEOP 7702-8702; ESCI 7702-8702). (GEOP 7702-8702; ESCI 7702-8702).

CERI 7703 - Seminar Earthquake Sys. Sci.

(3) Modern research techniques for understanding earthquake processes over multiple length and time scales. Focuses on six broad themes: Earth and Fault Structure, Deformation and Earthquake Rates, Earthquake Interactions, Monitoring, Physics-Based Models, and Earthquake Forecasting, emphasizing current research on specific topics within each area. PREREQUISITE(S): permission of the instructor.

CERI 7996 - Thesis

(1-6) 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

(3) (ESCI 7020-29-8020-29)

CERI 8102 - Programming Tools

(3) (Same as CIVL 7002/CIVL 8002) (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 programing. Three lecture hours per week. Three lecture hours per week. PREREQUISITE(S): Permission of the instructor.

CERI 8104 - Data Analysis in Geophysics

(3) (ESCI 7205) (same as CIVL 8126) 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

(3) (ESCI 7401) (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

(3) (GEOP 7602; GEOL 7358; ESCI 7602; CIVL 8127) (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

(3) (Same as CIVL 7125-CIVL 8125) (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

(3) (Same as CIVL 7001/CIVL 8001) (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

(3) (Same as CIVL 7136; same as ESCI 7204) (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

(3) 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

(3) 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

(4) (ESCI 7404) 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

(3) (Same as ESCI 7240/ESCI 8240) (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 obtained through field work. PREREQUISITE(S): Permission of the instructor.

CERI 8244 - Regional Geop Synthesis

(3) (GEOP 7112; ESCI 7112) (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

(3) (GEOP 7603; ESCI 7603: CIVL 8128) (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

(3) 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 8280 - Seismotectonics

(3) 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

(3) (GEOL 7315-8315; ESCI 7315-8315) 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 8353 - Geodynamics

(3) (Same as ESCI 7353) (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 mantel convection, solidification of magmas, mechanical behavior of faults, and subsidence of sedimentary basins. PREREQUISITE(S): Permission of instructor.

CERI 8355 - Appls Space-Base Geodesy

(3) (GEOP 7355; ESCI 7355) (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 earthâ€™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

(3) (GEOP 7402; ESCI 7402) (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

(3) (GEOP 7403; ESCI 7403-8403) (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

(3) (ESCI 7405-8405) (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

(3) (GEOL 7641, GEOP 7701, ESCI 7701). (GEOL 7641, GEOP 7701, ESCI 7701).

CERI 8702 - Seminar in Seismology

(3) (GEOP 7702-8702; ESCI 7702-8702). (GEOP 7702-8702; ESCI 7702-8702).

CERI 8703 - Seminar Earthquake Sys. Sci.

(3) Modern research techniques for understanding earthquake processes over multiple length and time scales. Focuses on six broad themes: Earth and Fault Structure, Deformation and Earthquake Rates, Earthquake Interactions, Monitoring, Physics-Based Models, and Earthquake Forecasting, emphasizing current research on specific topics within each area. PREREQUISITE(S): permission of the instructor.

CERI 9000 - Dissertation

(1-9) 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

(3) Chemical phenomena occurring in soil, atmospheric, and aquatic environments; consideration of natural resources and environment. PREREQUISITE(S): CHEM 3310 and CHEM 3211.

CHEM 6111 - Intermediate Inorganic CHEM

(3) 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 6180-6199 - Special Topics in Inorganic Chemistry

(1-3) Topics are varied and announced in online list of classes.

CHEM 6201 - Instrumental Analysis Lab

(1) 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 6211 - Instrumntl Analysis

(3) Topics in modern analytical instrumental analysis; atomic and molecular spectroscopy, mass spectrometry, electroanalytical chemistry and chromatograhpy. Three lectures hours per week. PREREQUISITE(S): CHEM 3211 with at least C-.

CHEM 6280-6299 - Special Topics in Analytical Chemistry

(1-3) Topics are varied and announced in online course listings.

CHEM 6290 - Special Topics in Analytical Chemistry

(1-3) Topics are varied and announced in online course listings.

CHEM 6310 - Intermediate Organic Chemistry

(3) Expansion of select topics from CHEM 3310 including in-depth analysis of structure and reactivity in organic compounds, synthetically important transformations, introduction to synthetic methods for preparing small molecules, and methods of identification. Lecture focused on problem solving. PREREQUISITE(S): CHEM 3310 or permission of instructor.

CHEM 6311 - Physical Organic Chemistry

(3) Theory of electronic structure organic compounds, relation between structure and reactivity of organic compounds, mechanisms of common organic reactions. Three lecture hours per week. PREREQUISITE(S): CHEM 3310 and 3511 with at least a C-. Repeat no more than two times.

CHEM 6315 - Organic Medicinal Chem **

(3) Introduction to principles of medicinal chemistry; structure, synthesis, and biochemical mechanism of action of major drug classes. PREREQUISITE(S): CHEM 3511.

CHEM 6380-6399 - Special Topics in Organic Chemistry

(1-3) Topics are varied and announced in online course listings.

CHEM 6406 - Molecular Spectroscopy Lab

(1) 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 Chem

(3) Advanced topics in physical chemistry, including statistical mechanics and thermodynamics plus selected topics in kinetic theory of gases, condensed phases, and non-equilibrium processes. PREREQUISITE(S): CHEM 3411 or permission of instructor.

CHEM 6414 - Quantum Chemistry/Spectroscopy

(3) A study of theoretical chemistry, chemical physics, theoretical molecular spectroscopy, and solid-state chemistry with emphasis on fundamentals of quantum mechanics, vibraional and rotational spectroscopy, molecular electronic spectra, and computational chemistry. Three lecture hours per week. PREREQUISITE(S): CHEM 3411 or permission of instructor.

CHEM 6416 - Molecular Spectroscopy

(3) 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 6480-6499 - Special Topics in Physical Chemistry

(1-3) Topics are varied and announced in online course listings.

CHEM 6501 - Lab Tech In Biochem

(2) (Same as BIOL 6503) (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

(3) (Same as BIOL 6511) (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

(3) (Same as BIOL 6512) (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 6580-6599 - Special Topics in Biochemistry

(1-3) Topics are varied and announced in online course listings.

CHEM 6603 - Materials Synthesis Lab

(1) 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

(3) Principles, methods and applications of modern chemical synthesis; organic, organometellic, 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 6614 - Polymer Chemistry

(3) Fundamental concepts in polymer chemistry and polymer physics with focus on synthesis, characterization, structure and properties of polymeric materials. Three lecture hours per week. PREREQUISITE(S): CHEM 3310 and CHEM 3411. Grades of S, U, or IP will be given.

CHEM 7001 - Directed Research

(1-10) 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

(3) 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

(1-3) May be repeated for a maximum of 12 credit hours

CHEM 7111 - Systematic Inor Chem

(3) 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

(3)

CHEM 7200-7209 - Special Topics in Analytical Chemistry

(1-3) May be repeated for a maximum of 12 credit hours PREREQUISITE(S): Permission of instructor.

CHEM 7211 - Adv Analytical Chem I

(3) 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

(3) 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

(1-3) May be repeated for a maximum of 12 credit hours PREREQUISITE(S): Permission of instructor.

CHEM 7311 - Adv Organic Chemistry

(3) 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

(3) Principles of synthesis of complex organic molecules. PREREQUISITE(S): CHEM 6311 or permission of instructor.

CHEM 7400-7409 - Special Topics in Physical Chemistry

(1-3) May be repeated for a maximum of 12 credit hours PREREQUISITE(S): Permission of instructor.

CHEM 7411 - Elect Structure & Sym

(3) 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

(3) Advanced treatment of topics in quantum chemistry with emphasis on electronic structure theories.

CHEM 7500-7509 - Special Topics in Biochemistry

(1-3) May be repeated for a maximum of 12 credit hours PREREQUISITE(S): Permission of instructor.

CHEM 7600 - Intro Grad Study Chem

(2) 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

(3) 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

(3) 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

(1-12) 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

(1) 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

(1) 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

(1-6) 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

(1-10) 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

(1-3) May be repeated for a maximum of 12 credit hours.

CHEM 8111 - Systematic Inor Chem

(3) 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

(3) 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

(3) 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

(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

(1-3) 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

(3) 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

(3) Principles of synthesis of complex organic molecules. PREREQUISITE(S): CHEM 6311 or permission of instructor.

CHEM 8400-8409 - Special Topics in Physical Chemistry

(1-3) May be repeated for a maximum of 12 credit hours PREREQUISITE(S): Permission of instructor.

CHEM 8411 - Elect Structure & Sym

(3) 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

(3) Advanced treatment of topics in quantum chemistry with emphasis on electronic structure theories.

CHEM 8500-8509 - Special Topics in Biochemistry

(1-3) May be repeated for a maximum of 12 credit hours PREREQUISITE(S): Permission of instructor.

CHEM 8601 - Chemistry Internship

(1) 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

(1-3) May be repeated for a maximum of 12 credit hours PREREQUISITE(S): Permission of instructor.

CHEM 8711 - Approx Chem Model Meth

(3) 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

(3) 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

(1-12) 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

(1) 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

(1) 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

(1-10) 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.

Chinese

CHIN 7101 - Advanced Business Chinese I

(3) 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

(3) Further devlopment 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

(3) 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

(3) Origins, evolution, and current state of community-based economic development. Course will include community-based field work.

PLAN 6004 - Community Organizing

(3) 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/Environmnt

(3) (Same as ESCI 6201; GEOG 6201) (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 6231 - Water Resources

(3) (Same as ESCI 6213; GEOG 6231) (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

(3) (ESCI 6261) (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 6443 - Transportation Planning

(3) (Same as ESCI 6443; GEOG 6443) (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

(3) (Same as ESCI 6502 ; GEOG 6502) (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

(3) (Same as ESCI 6515; GEOG 6515) (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

(3) (Same as ESCI 6521, GEOG 6521) (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

(3) Topics vary and are announced in the online class listing.

PLAN 7000 - Planning the American City

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Introduces key economic and fiscal issues in loca government, explores the relationship between planning and urban/surburban/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

(3) 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

(3) (Same as ESCI 7101) (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 - Plan Comm Facilities

(3) Planning the location and design of community facilities in the light of changing concepts of public service and community organization. PREREQUISITE(S): CIVL 4151. Grades of S/U, or IP will be given.

PLAN 7202 - Land Use Planning

(3) 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

(3) 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

(3) 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

(3) 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 7206 - Housing

(3) Survey of housing market characteristics, financing, development, preservation, and redevelopment from both public and private perspectives. PREREQUISITE(S): CIVL 1101, 3161.

PLAN 7208 - Economics of Cities

(3) 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

(3) 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 exectuable research methodology. PREREQUISITE(S): CIVL 3181, 4111 or permission of instructor.

PLAN 7302 - Geographic Environ Anly

(3) (Same as ESCI 7201; GEOG 7201) (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

(3) (Same as ESCI 7504; GEOG 7504) (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

(3) Topics vary and are announced in the online class listing.

PLAN 7701 - Directed Research

(1-3) 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

(3) Practical skills in operating a planning office in both public and private sectors. PREREQUISITE(S): Permission of instructor.

PLAN 7801 - Design Collaborative Studio

(3) 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

(1) 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

(1-3) 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

(3)

Civil Engineering

CIVL 6122 - Structural Analysis II

(3) Analytical and numerical solutions for statically indeterminate structures. PREREQUISITE(S): CIVL 3121, 3322 or equivalent.

CIVL 6131 - Inter Steel Design

(3) Design of plate girders and composite beams; moment connections; building design. PREREQUISITE(S): CIVL 3131 or equivalent.

CIVL 6136 - Inter Rein Concr Design

(3) 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 - Environmentl Engr Design

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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): 3137 or permission of instructor. COREQUISITE(S): CIVL 4151 or permission of instructor.

CIVL 6162 - Traffic Engineering

(3) 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 3103 and 3161 or equivalents.

CIVL 6163 - Airport Plnng & Design

(3) 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 3103 and 3161 or equivalents.

CIVL 6164 - Route Location & Design

(3) 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 6180 - Adv Hydrology/Hydraulics

(3) 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 6190 - Water Resources Planning and Management

(3) 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

4 ESCI 6211 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

3 ESCI 6213 Introduction to and practice of field methods in solving hydrologic problems. Engineering Course Fee

CIVL 6341 - Aqueous Geochemistry

3 ESCI 6341 Physical chemistry of aqueous solutions as it applies to geochemical processes on earths surface. Engineering

CIVL 6900-6910 - Special Topics in Civil Engineering

(1-3) Topics are varied and announced in the online class listings.

CIVL 7001 - Engineering Analysis

(3) (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. Grades of A-F, or IP will be given.

CIVL 7002 - Prog Tools for Scits & Engrs

(3) (Same as CERI 7102). An introduction to applied programming and programming tools for scientists and engineers at a graduate level with limited background on computer programing.

CIVL 7012 - Prob Meth In Engr **

(3) Concepts and methods of probability and statistics that are essential for modeling engineering problems under conditions of uncertainty; application to practical problems. PREREQUISITE(S): PREREQUISITE: CIVL 3103 or equivalent.

CIVL 7111 - Computatnl Mechncs

(3) Advanced mathematical modeling techniques using finite difference, finite element, and boundary element formulations to solve civil engineering problems.

CIVL 7112 - Plstc Dsgn Steel Strctr

(3) (7122) Plastic analysis and design of steel structures; application to multistory buildings.

CIVL 7113 - Prestressed Cncrte Dsgn

(3) (7121) Theory of prestressing; design of prestressed concrete beams, slabs, and box girders; statically determinate and indeterminate structures.

CIVL 7114 - Elastic Stability

(3) Classical theory of buckling of rods, plates, and shells.

CIVL 7115 - Plate Shell Struc **

(3) (Same as MECH 7115) 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

(3) 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

(3) 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 **

(3) Earthquake strong motion; response spectrum analysis; seismic design of buildings.

CIVL 7123 - Seismic Risk Assess

(3) 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

(3) (Same as CERI 7124). 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

(3) (Same as CERI 7104) 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

(3) (Same as CERI 7106) 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

(3) (Same as CERI 7260) 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

(3) Stresses in soil masses; pore-water stresses; consolidation and settlement; shear strength; applications to problem solution.

CIVL 7133 - Slopes and Embankments

(3) 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

(3) 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

(3) (same as ESCI 7204, 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): Permission of instructor.

CIVL 7137 - Geotechnical Earthquake

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Systems approach to solid waste generation, characterization, collection, transportation, and disposal; emphasizes both domestic and industrial wastes.

CIVL 7144 - Residuals Mgmt

(3) 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

(3) 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

(3) 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

(3) Design of hazardous waste management systems; application of current design theories; review of regulatory requirements.

CIVL 7154 - Indust Wastewater Treat

(3) 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

(3) 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

(3) 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

(3) 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

(3) Design practices, materials, and testing of flexible and rigid pavements.

CIVL 7168 - Traffic Engr Operations

(3) 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

(3) 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

(3) 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

(3) (Same as GEOL 7140) Inorganic and organic geochemical concepts applied to transport and fate of contaminants in surface water, ground water, and sediment. PREREQUISITE(S): ESCI 6341 and permission of instructor.

CIVL 7177 - Quantitative Hydrogeol

(3) 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

(3) 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

(3) (7148) 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 7191 - Computer Appl Water Res

(3) 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

(3) 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 7193 - Hydraul Sediment Transp

(3) Erosion and sedimentation processes in channels; river mechanics and stream morphology; analysis and quantification of sediment transport in alluvial river systems; engineering analysis procedures for design of stable channels. Engineering Course Fee

CIVL 7194 - Comp River Hydraulics

(3) (7149) 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

(3) (Same as ESCI 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.

CIVL 7196 - Urban Drainage

(3) 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

(3) 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

3 ESCI 7198 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 7261 - Traffic Flow Theory

(3) 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

(3) Introduce the concepts, modeling and solution methods of freight demand modeling.

CIVL 7263 - Intro. to Num. Opt. for Eng **

(3) 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

(3) 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

(3) 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

(3) 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

(3) Introduce the concepts and explain how the shipping marker 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

(3) 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

(3) 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 **

(3) 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

(3) 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

(3) 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

(1-3) Topics are varied and announced in the online class listings.

CIVL 7991 - Projects

(3) Independent investigation of problem selected in consultation with instructor; report required. Nine

laboratory hours per week. Grades of A-F, or IP will be given. PREREQUISITE(S): consent of instructor.

CIVL 7993 - Project & Report

(3) 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

(1-6) Grades of S, U, or IP will be given.

CIVL 8001 - Engineering Analysis

(3) (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

(3) (Same as CERI 8102) An introduction to applied programming and programming tools for scientists and engineers at a graduate level with limited background on computer programing. PREREQUISITE(S): Permission of the instructor.

CIVL 8012 - Prob Meth In Engr **

(3) 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 3103 or equivalent.

CIVL 8111 - Computatnl Mechncs

(3) Advanced mathematical modeling techniques using finite difference, finite element, and boundary element formulations to solve civil engineering problems.

CIVL 8112 - Plstc Dsgn Steel Strctr

(3) (7122) Plastic analysis and design of steel structures; application to multistory buildings.

CIVL 8113 - Prestressed Cncrte Dsgn

(3) (7121) Theory of prestressing; design of prestressed concrete beams, slabs, and box girders; statically determinate and indeterminate structures.

CIVL 8114 - Elastic Stability

(3) Classical theory of buckling of rods, plates, and shells.

CIVL 8115 - Plate Shell Struc

(3) 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

(3) 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

(3) 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

(3) Earthquake strong motion; response spectrum analysis; seismic design of buildings.

CIVL 8124 - Software Develop

(3) (Same as MECH 8382) Systematic investigation of application of good software engineering principles

applied to development of computationally intensive software; best practices and methodologies developed in last two decades (primarily in information processing field) applied within context of a numerical problem; language of discourse will be FORTRAN 90/95.

CIVL 8125 - Earthquake Ground Motion Simul

(3) (same as CERI 8124) 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

(3) (Same as CERI 8104) 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

(3) (Same as CERI 8106) 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

(3) (Same as CERI 8260) 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

(3) Stresses in soil masses; pore-water stresses; consolidation and settlement; shear strength; applications to problem solution.

CIVL 8133 - Slopes and Embankments

(3) 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

(3) 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

3 CERI 8204 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Systems approach to solid waste generation, characterization, collection, transportation, and disposal; emphasizes both domestic and industrial wastes.

CIVL 8144 - Residuals Mgmt

(3) Systems approach to unique solid wastes (inflammable industrial, sewage sludge, etc.), as well as resource recovery and energy conversion as disposal practices.

CIVL 8145 - Adv Biological Treatmnt

(3) 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

(3) 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

(3) Design of hazardous waste management systems; application of current design theories; review of regulatory requirements.

CIVL 8154 - Indust Wastewater Treat

(3) 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

(3) 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

(3) 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

(3) 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 Airpt Pvmt

(3) Design practices, materials, and testing of flexible and rigid pavements.

CIVL 8168 - Traffic Engr Operations

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) (8148) 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 8191 - Computer Appl Water Res

(3) 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

(3) 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 8193 - Hydraul Sediment Transp

(3) Erosion and sedimentation processes in channels; river mechanics and stream morphology; analysis and quantification of sediment transport in alluvial river systems; engineering analysis procedures for design of stable channels. Engineering Course Fee

CIVL 8194 - Comp River Hydraulics

(3) (8149) 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

(3) (Same as ESCI 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.

CIVL 8196 - Urban Drainage

(3) 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

(3) 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

3 ESCI 8198 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 8261 - Traffic Flow Theory

(3) 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

(3) Introduce the concepts, modeling and solution methods of freight demand modeling.

CIVL 8263 - Intro. to Num. Opt. for Eng **

(3) 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

(3) 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

(3) 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

(3) 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

(3) Introduce the concepts and explain how the shipping marker 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

(3) 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

(3) 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 **

(3) 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

(3) 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

(3) 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

(1-3) Topics are varied and announced in the online class listings.

CIVL 8991 - Projects

(3) Independent investigation of problem selected in consultation with instructor; report required. Nine laboratory hours per week. Grades of A-F, or IP will be given.

CIVL 8993 - Project & Report

(3) 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

(1-12) Grades of S, U, or IP will be given.

College of Professional and Liberal Studies

AVIA 7110 - Foundations AV Human Factors **

(3) 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

(2) 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 **

(2) 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 **

(2) 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 **

(2) 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 **

(2) 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 **

(2) 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

(0) 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 7000 - Fndtns Liberal Studies **

(3) 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

(3) Analysis of contemporary issues and trends in various topics. Course may be repeated for a maximum of 6 credits.

UNIV 7003 - 7005 - Special Topics

(3) Selected topics course based on current as well as emerging issues and/or trends of topical interest.

UNIV 7100 - Rsrch/Intrdiscipl Study **

(3) Methods of inquiry and research appropriate to interdisciplinary studies.

UNIV 7110 - Internship

(1-6) 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 **

(3) 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

(1-9) 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 **

(3) Interdisciplinary examination of major issue, historical period, theme. Subject matter will change from semester to semester.

UNIV 7210 - Rise and Fall of Empires **

(3) May serve as a course substitute for UNIV 7200 Liberal Studies Seminar.

UNIV 7300 - Prof Issues & Ethics

(3) 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

(3) Examines relationship between globalization and the professions.

UNIV 7700 - Graduate Student Internships

(0)

UNIV 7796 - Independent Study

(1-3) Research into interdisciplinary area of study supportive of individualized MALS program. May be repeated once.

UNIV 7997 - Special Project **

(3) Supervised research based upon knowledge and skills learned in MALS program. Creative or performance component acceptable.

UNIV 7998 - Professional Project

(3) Supervised research that serves as the integrative culmination for the Master of Professional Studies student.

UNIV 8000 - Foundations of Liberal Studies **

(3) 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 **

(3) 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 **

(3) (UNIV 7111). 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 **

(3) 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 **

(3) 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 **

(1-9) 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 **

(1-9) 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

(3) 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

(3) 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

(3) 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

(3) Development of health literacy as an area of concern in healthcare includiing patient/provider interactions, public health campaigns, health education, healthcare reform, and health insurance. PREREQUISITE(S): Permission of the instructor.

COMM 6016 - Public Health Campaigns

(3) Examination of the fundamentals of public health communication as well as the latest public health communcation innovations, tools, technologies, research and strategies. PREREQUSITE: COMM 3012, or permission of instructor.

COMM 6210-6219 - Special Topics in Communication Studies

(1-3) 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

(1-3) Topics are varied and announced in online class listings May be repeated for maximum of 9 hours when topic varies.

COMM 6340 - Listening

(3) 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

(3) Theory, research, and practice regarding dyadic communication.

COMM 6342 - Small Group Communcatn

(3) 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

(3) 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

(3) Theoretical, philosophical, and practical exploration of dialogic communication and relations.

COMM 6364 - Gender and Public Discourse

(3) 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 Is 19th, 20th and 21st century issues. Grades of A-F will be given.

COMM 6365 - Place/Community/Comm

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(1-6) 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

(3) 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

(3) Intermediate principles and practices of audio (recording, editing, mixing, and design) with emphasis on film and video production. Grades of A-F, or IP will be given.

COMM 6824 - Cinema/Videography

(3) Art of visual interpretation with a strong concentration in the theory and techniques of lighting. Experience with professional cameras and lighting equipment. PREREQUISITE(S): Minimum grade of "C" in COMM 38824 or permission of instructor.

COMM 6825 - Editing/Post Production

(3) 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. Grades of A-F will be given.

COMM 6841 - Television Workshop

(4) 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.

COMM 6842 - TV Studio Production II

(4) Advanced training in TV studio/multiple camera techniques; extensive production work.

COMM 6850 - Film History I

(3) (6852) (6852). Historical survey of motion pictures from medium's pre-history to 1940 with emphasis on narrative film.

COMM 6851 - Film History II

(3) Historical survey of major movements, genres, and themes in narrative film from 1940 to 1980.

COMM 6853 - Documentary Form Film

(3) Development of non-fiction film as rhetorical and expressive form; analysis of individual films, genres, and filmmakers.

COMM 6854 - Documentary Form/Broadcasting

(3) History, theory, and criticism of non-fiction broadcasting, including docudrama and television documentaries.

COMM 6856 - Gender and Film

(3) 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

(3) Major themes and styles in international and American narrative film from 1980 to present.

COMM 6859 - Monster Films

(3) Survey of classic and contemporary monster films exploring monstrosity as a social and cultural category for organizing, classifying, and managing change.

COMM 6891 - Produce/Direct Film/Vid

(3) Research and script preparation; budgeting and production management; working with actors and crew. PREREQUISITE(S): Minimum grade of C in COMM 3824 or permission of instructor.

COMM 6960 - Documentary Writing

(3) Writing for nonfiction media.

COMM 6970 - Screenwriting

(3) 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

(3) ENGL 7010 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 **

(3) (Same as ENGL 7012-ENGL 8012) (Same as ENGL 7012-8012). Examines current issues in health communication research, including patient-provider relationships, new technologies and health promotion, and health organizations. May be repeated for a maximum of 9 credit hours.

COMM 7013 - Sem Political Comm

(3) 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

(3) (same as PUBH 7014-8014). 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

3 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/Communicatn

(3)

COMM 7210-7219 - Special Topics in Communication Studies

(1-3) Topics are varied and announced in online class listings.

COMM 7321 - Communication Theory

(3) Advances studies of theories, models, and approaches to the study of communication.

COMM 7322 - Persuasion & Influence

(3) no 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

(3) Specific topics, issues, and research in communication theory. May be repeated for a maximum of 9 hours credit.

COMM 7332 - Topics in Comm Methods

(3) 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

(3) (Same as PUBH 7345-PUBH 8345) 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

(3) (Same as ENGL 7350-ENGL 8350) (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 7362 - Sem Public Address

(3) 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

(3) 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

(3) (Same as ENGL 7371-ENGL 8371) (Same as ENGL 7371-8371). Examines principal modes of contemporary rhetorical analysis.

COMM 7374 - Directed Studies in Comm Arts

(1-3) 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

(3) Survey of qualitative research in communication studies including the design, collection, and analysis of qualitative data.

COMM 7450 - Interpersonal Communication

(3) 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

(3) 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

(3) Examines key figures and ideas central to the development of rhetorical theory in the 20th and 21st century.

COMM 7621 - Seminar Argumentation

(3) (Same as ENGL 7621 -ENGL 8621) (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

(3) 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

(1-6) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) (Same as ENGL 7815-ENGL 8815) (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 7819 - Rhetoric Of Science

(3) (Same as ENGL 7819-ENGL 8819) 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

(3) (Same as ENGL 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 hours when topic varies.

COMM 7892 - Film/Video Production

(1-3) 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

(3) 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): AUSP 8003 and AUSP 8010 or permission of instructor.

COMM 7993 - Special Problems

(1-3) Directed individual investigation of special research projects not included in thesis. Grades of A-F will be given.

COMM 7994 - Culminating Project

(3-6) Culminating research project in lieu of a thesis. Course may be repeated up to 6 hours.

COMM 7995 - Production Practicum

(3-6) 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

(1-6) Grades of S, U, or IP will be given.

COMM 8010 - Writ./Comm Cent. Theory/Meth

(3) ENGL 8010 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 **

(3) (Same as ENGL 7012-ENGL 8012) (Same as ENGL 7012-8012). Examines current issues in health communication research, including patient-provider relationships, new technologies and health promotion, and health organizations. May be repeated for a maximum of 9 credit hours.

COMM 8013 - Sem Political Comm

(3) 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

(3) (Same as PUBH 7014-8014). 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

3 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

(1-3) Topics are varied and announced in online class listings.

COMM 8321 - Communication Theory

(3) Advanced studies of theories, models, and approaches to the study of communication.

COMM 8322 - Persuasion & Influence

(3) 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

(3) Specific topics, issues, and research in communication theory. May be repeated for a maximum of 9 hours credit.

COMM 8332 - Topics in Comm Methods

(3) 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

(3) (Same as PUBH 7345-PUBH 8345). 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

(3) (Same as ENGL 7350-ENGL 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 8362 - Seminar Public Address

(3) 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

(3) 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

(3) (Same as ENGL 7371-ENGL 8371) 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

(1-3) 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

(3) Survey of qualitative research in communication studies including the design, collection, and analysis of qualitative data.

COMM 8450 - Interpersonal Communication

(3) 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

(3) 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

(3) Examines key figures and ideas central to the development of rhetorical theory in the 20th and 21st century.

COMM 8621 - Seminar Argumentation

(3) (Same as ENGL 7621 -ENGL 8621) Examines historical and contemporary argumentation theories and how those theories are incorporated into teaching oral argumentation and composition.

COMM 8632 - Sem Rhet Criticism

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) (Same as ENGL 7815-ENGL 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 8819 - Rhetoric Of Science

(3) (Same as ENGL 7819-ENGL 8819) 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

(3) (Same as ENGL 7820-ENGL 8820) 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

(1-3) Directed individual investigation of special research projects not included in thesis. Grades of A-F will be given.

COMM 8995 - Production Practicum

(3-6) 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

(1-9) 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

(1-9) 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 **

3 Historical and philosophical understanding of entrepreneurship in the arts; developing a written proposal for arts startup.

CCFA 7002 - Arts Entrepreneurship II **

3 Developing a business model and marketing plan for an arts startup. PREREQUISITE(S): CCFA 7001

CCFA 7003 - Arts Entrepreneurship III

3 Brand and product development for an arts startup. PREREQUISITE(S): CCFA 7001 & 7002

CCFA 7004 - Arts Entrepreneurship IV

3 Funding the arts startup and formally pitching the product. PREREQUISITE(S): CCFA 7001, 7002, 7003

Communication Sciences and Disorders

AUSP 6001 - Accent Modification

(1) 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).

AUSP 6006 - Language & Speech Development

(3) (AUSP 4006) Normal acquisition of speech and language in young children, contemporary theories of language acquisition, bilingual differences, and early literacy and play skills.

AUSP 6106 - Introduction to Audiology

(3) 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 6205 - ASL for Speech, Audio, & Educ

(3) This course presents (1) basic vocabulary and grammar of American Sign Language appropriate for use in the classroom and therapy setting and (2) specific topics, information, and strategies that provide exposure to elements of Deaf Culture and the Deaf community for speech-language pathologists, audiologists, and educators.

AUSP 6206 - Deaf Culture & Deaf History

(3) 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.

AUSP 6207 - Psychological, Sociological, and Educational Perspectives of Deafness

(3) (AUSP 4207) 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. PREREQUISITE(S): AUSP 1010 or AUSP 4205- AUSP 6205.

AUSP 6208 - Introduction to Interpreting American Sign Language

3 This course provides students with the key concepts and information about the ethics and competencies necessary to become an interpreter for the Deaf. PREREQUISITE(S): AUSP 1010, AUSP 1020, AUSP 3020

AUSP 6209 - Linguistics in American Sign Language

3 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. PREREQUISITE(S): AUSP 1010, AUSP 1020, AUSP 2010, AUSP 3020

AUSP 6300 - Autism: Communic & Socializtn

(3) 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.

AUSP 6301 - Survey Neurological Disorders

(3) 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

(3) 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

(3) 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

(1-3) 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

(3) Structure and function of bodily organs related to the processes of speech production.

AUSP 7004 - Anat Phys Hear Mec

(3) 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

(1) Covers procedures for collecting and interpreting language samples using specialized software and other methods.

AUSP 7006 - Lang & Speech Devel

(3) 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

(3) 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

(3) 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

(2) 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

(3) 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

(1) 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

(3) 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 7101 - Audiol Concepts

(4) 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

(1-6) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(1) 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

(1-3) 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

(3) 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

(3) 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. PREREQUISITE(S): AUSP 7007/AUSP 8007 or permission of instructor.

AUSP 7200 - Intro Clin Pract

(2) 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 - Clft Palate/Craniofcl Dis

(3) 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

(3) 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

(3) 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/Articulatn

(3) Current research in disorders of phonology and articulation, including assessment, production, and remediation procedures.

AUSP 7205 - Fluency Disorders

(3) 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

(3) 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 andAUSP 7010/AUSP 8010 or permission of instructor.

AUSP 7207 - Clinical Instrumentation

(1-3) 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

(1-3) Supervised clinical practice with clients. Designed to meet student's individual needs. May be repeated as often as desired Grades of A-F, or IP will be given.

AUSP 7209 - Dysphagia/Related Disor

(3) 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

(1-3) 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

(1-2) 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 semster of AUSP 7208 A-F, or IP will be given.

AUSP 7212 - Autism Spect Disord/Rel Disabl

(3) 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

(1) 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 7300 - Lang Dis In Children

(3) 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 Disordrs/Adults I

(4) 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 PREREQUISITE(S): AUSP 7003/AUSP 8003 and AUSP 7010/AUSP 8010, or permission of instructor.

AUSP 7303 - Lang Disordrs/Adults II

(3) 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 andAUSP 7010/AUSP 8010 or permission of instructor

AUSP 7304 - Sem Lang Disorders

(1-3) 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

(3) 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

(3) 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

(3) 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

(1-3) 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

(1) Broad and narrow transcription techniques and opportunities for transcription practice with normal and disordered populations.

AUSP 7502 - Intro to Phonetic Transcriptio

(1) Fundamentals of broad phonetic transcription including opportunities for transcription practice with standard American English materials.

AUSP 7505 - Interprofessional Educ & Pract

(1-3) 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 7514 - Cognitive Science Seminar

(3) PHIL 7514, COMP 7514, PSYC 7514 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 7700 - Individ Readings Audiol

(1-3) 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

(1-3) 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 - Special Projects

(1-3) Students study a specific area under faculty guidance. May be taken twice. PREREQUISITE(S): Permission of individual faculty members to be involved.

AUSP 7991 - Clinical-Research Colloquium

(1) Faculty and guest presentations and discussions of recent, clinically relevant research and related topics in Communication Sciences and Disorders. Topics include (but are not limited to) evidence based practices in evaluation and treatment of communication disorders. May be repeated for up to 3 credits.

AUSP 7996 - Thesis

(1-3) 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

(3) 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

(3) 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

(1-3) 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

(3) Structure and function of bodily organs related to the processes of speech production.

AUSP 8004 - Anat Phys Hear Mec

(3) 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

(1) Covers procedures for collecting and interpreting language samples using specialized software and other methods.

AUSP 8006 - Lang & Speech Devel

(3) 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

(3) 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

(3) 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

(2) 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

(3) 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

(3) 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 - Instr, Calib, & Hear Conserv

(3) 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.

AUSP 8016 - Sociocultrl Base Comm

(3) 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

(3) 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 I

(3) This course is designed to teach the principle concepts of anatomy, physiology, electrophysiology, and neurophysiology of the peripheral and central auditory and vestibular systems. $25 per credit

AUSP 8020 - Auditory Processing Across the Lifespan

(3) 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. $25 per credit PREREQUISITE(S): AUSP 8019 or permission of instructor.

AUSP 8021 - Prof Prep/Scientists

(1) 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

3 Foundational knowledge for establishing a successful tinnitus treatment program in a private practice setting. Business considerations for audiologists are addressed. $25 per credit hour PREREQUISITE(S): AUSP 8101, AUSP 8103, AUSP 8019, AUSP 8020, or permission of instructor.

AUSP 8031 - Practice Management and Billing in Audiology

2 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. $25 per credit hour PREREQUISITE(S): AUSP 8104

AUSP 8100 - Ind Read Audiology

(1-6) 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

(3) 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

(3) Differential diagnosis of hearing loss including behavioral and acoustic (otoacoustic emissions) tests and introduction to electrophysiologic 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

(1-6) 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 8105 - Vestibular Assmt/Rehab

(3) 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

(3) 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

(1-3) 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.

AUSP 8112 - Sem Audiology

(3) 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

(3) Roles of auditory, visual, and bisensory cues in communication: effects of hearing impairment on speech and language development; communication strategies; psychology of deafness and deal culture; prosthetic devices. PREREQUISITE(S): AUSP 8101,AUSP 6106,AUSP 7106 or permission of instructor.

AUSP 8114 - Intro Hearing Aids

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(2) 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

(1-6) 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

(1-3) 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

(2-6) 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

(3) 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

(3) 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

(3) 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. PREREQUISITE(S): AUSP 7007/AUSP 8007 or permission of instructor.

AUSP 8200 - Ind Read Sp Path

(1-6) 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.

AUSP 8201 - Clft Pllate/Craniofcl Dis

(3) 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

(3) 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

(3) 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

(3) Current research in disorders of phonology and articulation, including assessment, production, and remediation procedures.

AUSP 8205 - Fluency Disorders

(3) 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

(3) 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

(1-3) 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

(1-3) 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

(3) 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

(1-3) 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

(3) 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 8221 - Ind Proj Sp Path

(1-6) 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

(3) 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 Disordrs/Adults I

3 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 Disordrs/Adults II

(3) 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

(1-3) 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

(3) 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

(3) 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

(3) 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

(1-3) 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

(1-3) 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

(3) PHIL 8514, COMP 8514, PSYC 8514 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 8999 - Predoctoral Practicum

(0)

AUSP 9000 - Dissertation

(1-12) 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

(3) 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. 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 2700 recommended.

COMP 6005 - Web Design/Development

(3) 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 insructor.

COMP 6014 - Intro Java Programming

(3) 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

(3)

COMP 6019 - Competitive Prog/Tech Interview

(1) 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 - Desgn/Anlys Algorithms

(3) 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 and 3410 or permission of instructor.

COMP 6040 - Programming Languages

(3) 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

(3) 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

(3) 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

3 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

(3) 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

(3) 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. PREREQUISITE(S): COMP 2150 and either COMP 3410 or EECE 4278, or permission of instructor.

COMP 6272 - System Admin and Unix Prog

(3) 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

(3) 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

(3) 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

(3) 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

(3) Security issues and solutions in wireless and mobile networks.

COMP 6430 - Digital Forensics

(3) 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

(3) Secure programming practices necessary to develop applications against attacks and exploits.

COMP 6601 - Models Of Computation

(3) 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

(3) (Same as EECE 6720.) 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

(3) (Same as EECE 6730.) (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 Visualization

(3) (Same as EECE 6731) (Same as EECE 6731). 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 - Introduction to Neurocomputing

3 Topics include connectionist data-driven AI; Learning algorithms; Least-mean squares; Supervised learning algorithms (perceptrons. backpropagation and its variants, recurrent neural nets); Unsupervised methods (Hebbian, competitive and reinforcement learning); Deep Learning; Computing platforms for neural nets; case studies. PREREQUISITE(S): COMP 2150 and MATH 3242, or permission of instructor.

COMP 6745 - Intro to Machine Learning

(3) 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

(3)

COMP 6901 - Ind Study Computer Sci

(1-3) 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

(1-6) 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 - Topics in Computer Science

(1-3) Topics are varied and announced in the online course listing PREREQUISITE(S): COMP 7116 or permission of instructor.

COMP 7012 - Fndtns/Software Engr

(3) (Same as EECE 7012-EECE 8012) (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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Recent theoretical and practical issues in software engineering. PREREQUISITE(S): COMP 7012 or permission of instructor.

COMP 7115 - Database Systems

(3) 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. PREREQUISITE(S): COMP 6730 or COMP 6720 or permission of instructor.

COMP 7116 - Adv Database Systems

(3) 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 6040 or COMP 6041 or permission of instructor.

COMP 7117 - Topic Database Mgmt Sys

(3) 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 **

(3) 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 - Cryptgrphy/Data Securty

(3) (Same as MIS 7670-MIS 8670) (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

(3) 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

(3) 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 **

(3) 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

(3) 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

(3) 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

(3) (COMP 8274). 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 - Evolutionry Computation

(3) 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

(3) (Same as MMCS 7290-8290) (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

(3) 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

(3) 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

(3) 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

(3) 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

(3) (same as COMP 8514, AUSP 8514, PHIL 7514 - PHIL 8514, PSYC 7514 - PSYC 8514). 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

(3) 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 **

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Recent developments and practical issues in algorithms and data structures.

COMP 7719 - Combinatorial Optimiztn

(3) 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

(3) (Same as EECE 7720-EECE 8720) (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

(3) (Same as EECE 7740-EECE 8740) (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 **

(3) An introduction to machine learning: hypothesis spaces, formation and evaluation; concept learning, decision trees, linear regression and perceptrons; graphical models (naÃ¨ve 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

(3) 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

(3) 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

(3) 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

(3) (Same as PSYC 7221-PSYC 8221) (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

(3) 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

(3) 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

(1-9) 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 Comp Sci

(1) Overview of research methods in computer science; how to read and write research papers in computer science; presentation skills for technical presentations; software tools for research in computer science. NOTE: Open to Computer Science majors only. NOTE: Open to Computer Science majors only. (Offered alternate years)

COMP 7960 - Sem Teaching/Res/Consult

(3) 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

(1-3) 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 7990-7995 - Advanced Topics in Computer Science

(1-3) Advanced topics and recent developments in computer science. Repeatable by permission PREREQUISITE(S): COMP 2150 or permission of instructor.

COMP 7996 - Thesis **

(1-6)

COMP 8012 - Fndtns/Software Engr

(3) (Same as EECE 7012-EECE 8012) (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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Recent theoretical and practical issues in software engineering. PREREQUISITE(S): COMP 7012 or permission of instructor.

COMP 8115 - Database Systems **

(3) 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. PREREQUISITE(S): COMP 6730 or COMP 6720 or permission of instructor.

COMP 8116 - Adv Database Systems

(3) 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.

COMP 8117 - Topic Database Mgmt Sys

(3) Advanced current research topics in database and information management, with emphasis on nontraditional data and applications.

COMP 8118 - Data Mining **

(3) 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

(3) (Same as MIS 7670-MIS 8670) (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

(3) 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. PREREQUISITE(S): COMP 7105 or equivalent, or permission of instructor.

COMP 8130 - Inform Retrieval/Web Search

(3) 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 **

(3) 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

(3) 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

(3) 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

(3) COMP 7274 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

(3) 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

(3) (Same as MMCS 7290-8290) (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

(3) 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

(3) 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

(3) 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

(3) 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

(3) (same as COMP 7514, AUSP 8514, PHIL 7514 - PHIL 8514, PSYC 7514 - PSYC 8514). 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

(3) 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/Comptr Interact

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Recent developments and practical issues in algorithms and data structures.

COMP 8719 - Combinatorial Optimiztn

(3) 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

(3) (Same as EECE 7720-EECE 8720) (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

(3) (Same as EECE 7740-8740) (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 **

(3) An introduction to machine learning: hypothesis spaces, formation and evaluation; concept learning, decision trees, linear regression and perceptrons; graphical models (naÃ¯ve Bayes, Bayes Nets, Hidden Markov Models); computational learning theory; Support Vector Machines; instance-based learning.

COMP 8747 - Adv Topics in Machine Learning

(3) 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

(3) 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

(3) 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

(3) (Same as PSYC 7221-PSYC 8221) (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

(3) 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 8901 - Ind Studies COMP SCI

(1-9) 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 8960 - Sem Teaching/Res/Consult

(3) 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 8990-8995 - Advanced Topics in Computer Science

(1-3) Advanced topics and recent developments in computer science. Repeatable by permission PREREQUISITE(S): COMP 2150 or permission of instructor.

COMP 9000 - Dissertation

(1-12) 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.

Consumer Science and Education

CCFA 6001 - Arts/Schools Institute

(1)

CSED 6101 - Preschool Curriculum

(3) (HMEC 6101). Application of child development principles to program planning; infancy through four years of age.

CSED 6204 - Frnshng Prblms Prsntns

(3) (HMEC 6204). Problems in planning, coordinating, and purchasing of home furnishings. PREREQUISITE(S): CSED 2004, 4304.

CSED 6205 - Behv Sci Aspct Clothng

(3) (HMEC 6205). Interdisciplinary study of clothing and appearance: concepts, methodologies, and applications of behavioral science to clothing.

CSED 6300 - Family Resource Mgmt

(3) (HMEC 6300). 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

(3) (HMEC 6304). Major trends and influences on contemporary residential furnishings as these affect home furnishings merchandising. PREREQUISITE(S): CSED 2104.

CSED 6383 - Mat/Meth Family CSED

(3) (HMEC 6383). 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

(3) (HMEC 6393). 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

(3) (HMEC 6405). 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

(1)

CSED 6904 - Sty Tour: Hsng/Hm Frnsh

(1) (HMEC 7904). 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

(1) (HMEC 6900-006). 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

(1) (HMEC 7300). 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

(3) (HMEC 7311). 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

(3) (HMEC 7312). 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

(1) (HMEC 7393). 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

(3) (HMEC 7302). 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

(3) (HMEC 7302). Supervised field experience. PREREQUISITE(S): Permission of Department Chair. Grades of S, U, or IP will be given.

CSED 7403 - Intrnshp Fam/Consmr Sci

(3) (HMEC 7302). Supervised field experience. PREREQUISITE(S): Permission of Department Chair. Grades of S, U, or IP will be given.

CSED 7404 - Intrnshp Hous/Hom Fur

(3) (HMEC 7302). Supervised field experience. PREREQUISITE(S): Permission of Department Chair. Grades of S, U, or IP will be given.

CSED 7405 - Intrnshp Fash Ind

(3) (HMEC 7302). Supervised field experience. PREREQUISITE(S): Permission of Department Chair. Grades of S, U, or IP will be given

CSED 7406 - Intrnshp Mktg Ed

(3) (HMEC 7302). Supervised field experience. PREREQUISITE(S): Permission of Department Chair. Grades of S, U, or IP will be given.

CSED 7600 - Entrprnpshp Merch/CSED

(3) 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

(3) 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

(3) 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

3 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

3 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

3 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

3 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

3 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

3 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

3 This will be cross listed with a master's level 7000 level course with the same name. 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

(3) This course will consist of disucssions 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 7700 - Intrvntns Mntl Disordrs

(3) 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

(3) 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

(3) 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

(1-3) 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

(3) (7684-8684) (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

(3) (8793) (8793). Theoretical-philosophical and research base of group counseling and psychotherapy; supervised application. PREREQUISITE(S): Doctoral Student

CPSY 8200 - Coun Psyc Practicum

(3-6) (8694) (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

(3) (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

(3) (COUN 8769) (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

(3) (7683-8683) (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

(3) 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

3 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

(1-3) (7790-8790) (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

(3) This course will consist of disucssions 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(1-3) 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

(3) 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 8790 - Spc Prblms in Coun Psychology

(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 8798 - Soc Just Coun

(3) 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

(3) 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 evalution, 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

(1-6) (8890) (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

(0) (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

(1-12) 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

(3) 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

(3) 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

(3) Survey of human services for treating alcoholics and substance abusers; overview of treatment strategies and philosophies.

COUN 6901 - Prin/Tech/Rehab Counsel

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(1-3) 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

(3) Introduction to professional roles, responsibilities, and identity of counselor; counseling ethics, credentials, and sociocultural context of counseling.

COUN 7513 - Secondary School Transition

(3) SPED 7513. 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 Procss

(3) 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

(3) (7581-8581) (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

(3) (7582-8582) 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

(3) (7651-8651) 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

(3) (7661-8661) (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

(3) (7690-8690) (7690-8690). Implementation and practice of counseling theories; modeling, practice, and critique of counseling skills.

COUN 7630 - Clinical Mental Health Coun

(3) 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

(3) (7892-8892) (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

(4-9) (7698-8698) (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

(3) 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

(3) (7692-8692) (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

(3-6) (7697) (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

(3) 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

(3-6) 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

(3) (7691-8691) (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

(3-6) (7696-8696) (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 7700 - Spiritual Issues in Counseling

(3) 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

3 This course provides advanvced 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

(3) (7780) (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

(3) (8781) (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

(3) (8782) (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

(3) 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 7730 - Crisis Intrvntn Coun

(3) 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

(3) 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

(3) (8784) (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

(3) (8783) (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

(3) 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

(3) Grades of S, U, or I will be given.

COUN 7771 - Clinical Hypnotherapy

(3) 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

(1-3) (7672-8672) (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

(1-3) (7993) (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

(1-3) Study of current topics in the area of counseling. May be repeated with a change in content;

COUN 7824 - College Admission Counseling **

(3) 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 **

(3) 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 **

(3) 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

(3) 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

(3) (CPSY 7784-8784) (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 7885 - Legal/Eth Issues Coun

(3) (CPSY 7785-8785) (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

(3) 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

(3) 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

(3) Supervised counseling experiences with persons with disabilities; application of appropriate theories, principles, and practices to personal counseling.

COUN 7942 - Internshp Rehab Counsel

(4-9) Supervised field experiences in cooperation with the state rehabilitation agency and other human service agencies and facilities.

COUN 8000 - Spec Culmn Experience

(1-6) 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

3 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

(3) 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

(3) (CPSY 7786-8786) (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

(3) 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

(3) 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

(3-12) (7699/8699) (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

(3) (7690-8690) (7690-8690). Implementation and practice of counseling theories; modeling, practice, and critique of counseling skills.

COUN 8630 - Clinical Mental Health Coun

(3) 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

(3) 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

(3) 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

(3) 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 Develp Family Thrpy

(3) (7780) (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

(3) (8781) (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

(3) (8782) (8782). Marital and couple counseling and problem situations; phases of therapy, ethical dilemmas, research methodology in couple/family dysfunction.

COUN 8723 - Hum Sexulty Coun/Psyc

(3) 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

(3) 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

(3) This course is designed to familiarize students with issues related to counseling sexually victimized children and their families.

COUN 8750 - Multicultural Counseling

(3) (8784) (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

(3) (8783) (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

(3) 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

(3)

COUN 8771 - Clinical Hypnotherapy

(3) 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

(1-3) (7672-8672) (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

(1-3) (7993) (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

(1-3) 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

(3) 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

(3) 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 Achvmnt Gap **

(3) 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

(3) 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

(3) (CPSY 7731-8731) (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

(3) (CPSY 7784-8784) (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

(3) (CPSY 7785-8785) (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

(3) 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

(3) 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

(1-9) 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

(1-3) Topics are varied and announced in online course listings.

CJUS 6152 - Drug Misuse and Abuse

(3) 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): ESCI 3311, or permission of instructor.

CJUS 6160 - Forensic Sciences

(3) 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 - Corp/White Collar Crime **

(3) Organizational and occupational crime in comparison to other types of criminality; emphasis on causes, frequency, control, and social impact. Grades of S, U, or IP will be given.

CJUS 6190 - Terrorism Soc/Legl Prsp **

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

3 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

3 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

3 Gender in the American system of criminal justice; examining how practices of criminal justice reflect societal organization, conflict, and social change.

CJUS 7100 - CJ Administration **

(3) 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): one college-level MATH course, or permission of instructor.

CJUS 7110 - Ind Dir Study

(1-4) 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): ESCI 1040, MATH 1910, or permission of instructor

CJUS 7128 - Rsrch Mthds Crim Justce **

(3) 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): ESCI (GEOG) 1010 or 1020 or 1301 or 3430 or 4201, or permission of instructor.

CJUS 7129 - Advanced Stat In Cj

(3) 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 Anly/Crim Bhvr **

(3) In-depth study of normal crimes"; the analysis of the characteristics of the criminal PREREQUISITE(S): ESCI (GEOG) ESCI 6515 or permission of instructor.

CJUS 7131 - Res Practicum In Cj

(3) 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): ESCI 4511, or permission of instructor.

CJUS 7141 - Reading For Comps

(1-6) 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 Justce

(3-6) 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

(3) 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 **

(3) 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

(3) 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,Gender **

(3) 3 PREREQUISITE(S): ESCI (GEOL) 3712.

CJUS 7510 - Law And Society

(3) 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 - Cncpt Of Criminal Law

(3) Social foundation and principles on which our system of criminal law is based. PREREQUISITE(S): CHEM 1020 or CHEM 1120 and permission of instructor.

CJUS 7535 - Seminar in Capital Punishment **

(3) 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 - Crim Theory **

(3) 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): ESCI 6216 or permission of instructor.

CJUS 7542 - Victimology **

(3) 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. PREREQUISITE(S): ESCI (GEOL) 3512 or equivalent.

CJUS 7570 - Legal Issues CJ Admin

(3) 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. PREREQUISITE(S): ESCI (GEOL) 3311, 3712, and permission of instructor.

CJUS 7900 - Graduate Capstone

3 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

(1-6) Grades of S, U, or IP will be given. PREREQUISITE(S): ESCI (GEOL) 4311 or ESCI 6311 or equivalent. Grades of S, U, or IP will be given.

CJUS 8100 - Cj Administration

(3) 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): ESCI 6211 and permission of instructor. Grades of A-F, or IP will be given.

CJUS 8110 - Ind Dir Study

(1-4) 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

(1-6) Arranged on an individual basis for Criminology and Criminal Justice graduate students only and directed by faculty.

CJUS 8150 - Intrnshp Criminl Justce

(3-6) 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

(1-3) Topics are varied. May be repeated for maximum of 9 hours. PREREQUISITE(S): Permission of instructor.

DANC 6101 - Dance Repertory

(3) 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

(3) 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

(3) 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 6301 - Directed Studies Dance

(1-3) 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 Settng

(3) 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.

Early Childhood Education

ECED 6510 - Erly Chld Prgms/Pr

(3) 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 Scl Lrng/Dev

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(1-3) 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

(1-6) 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

(3) 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 - Rdng Erly Chld Ed Rsrch

(3) 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

(3) (GEOG 6122) (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

(3) (GEOG 6201) (Same as PLAN 6201) (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

(4) (GEOL 6202) (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 6211 - Physical Hydrology

(4) (GEOL 6211) (same as CIVL 6211). (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

(3) (Geol 6213) (same as CIVL 6213). (Geol 6213). Introduction to and practice of field methods in solving hydrologic problems.

ESCI 6214 - Climatology

(3) (GEOG 4211) (GEOG 4211). Climatic elements and methods of data analysis; applications of climatology in agriculture, health, economics, and architecture.

ESCI 6215 - Physical Climatology

(3) (GEOG 6215) (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

(3) 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 Resources

(3) (GEOG 6231) (Same as PLAN 6231) (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

(3) (GEOG 6241) (Same as BIOL 6241) (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

(3) (GEOG) (GEOG). Environmental hazard and disaster experiences to investigate the nature, impact, and social responses to environmental hazards; focus is placed on relationship beteen 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

(3) (GEOG 6252) (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

(3) 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

(3) (Same as ANTH 6270) (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

(3) 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

(3) 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

(3) 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

(3) (Same as ANTH 6325) (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

(3) (GEOL 6332) (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

(3) (Same as ANTH 6335) 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

(3) (GEOL 6341) (same as CIVL 6341). (GEOL 6341). Physical chemistry of aqueous solutions as it applies to geochemical processes on earths surface.

ESCI 6350 - Archaeology of Collapse

(3) (Same as ANTH 6350) (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

(3) Global survey of cultures from first humans to early civilizations. PREREQUISITE(S): Permission of instructor.

ESCI 6365 - Cultural Resource Mgmt

(3) (ANTH 4375-6375) (ANTH 4375-6375). The majority of archaelogocial 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

(3) Addresses various areas of archaeology. May be repeated for a maximum of 6 hours credit with a change of topic.

ESCI 6430 - Economic Geography

(3) Spatial characteristics and distribution of economic activities.

ESCI 6431 - Urban Geography

(3) Geography of urban processes and forms. Cultural, social, economic, and political aspects of the contemporary city.

ESCI 6443 - Transportation Planning

(3) (GEOG 6443) (Same as PLAN 6443) (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

(3) (GEOG 6511, GEOL 6512) (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

(4) (GEOL) (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 **

(3) (GEOG 6515) (Same as PLAN 6515) (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

(3) (GEOG 6521) (Same as PLAN 6521) (GEOG 6521; same as PLAN 6521). Introduction to quantitative methods in spatial analysis.

ESCI 6525 - Adv Geographic Info Sci

(3) (GEOG 6525) (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

(3) Practical exercises and datasets to eleborate 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

(3) (GEOG 6531) (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

(3) 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

(3) 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

(3) (Same as ANTH 6680) (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 Internshp

(1-9) (GEOG 6700) (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. May be repeated for a maximum of 9 hours. Credit allowed only after acceptance of report

ESCI 6701 - ESCI Field Excursions

(1-2) (GEOL 6701) (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

(3) Introduction to earth science research; includes project design, abstract and proposal preparation, and presentation skills.

ESCI 7010-7019 - Special Topics in Geology

(3) May be repeated for a maximum of 6 hours credit with a change of topic.

ESCI 7100 - Basin Analysis

(3) (GEOL 7100) (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

(3) (Same as PLAN 7101) (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

(3) (GEOL 7102) (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

(3) (GEOG 7120-8120) (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

(3) 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

(3) 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

(4) (GEOL 7170, 7352) (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/Metamrphic Petr

(4) (GEOL 7190) (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

(3) (GEOL 7195) (Same as CIVL 7195) (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

(3) (GEOL 7197) (Same as CIVL 7197) (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

(3) (GEOG 7201-8201) (Same as PLAN 7302) (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

(3) (GEOL 7202) (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

(3) (Same as CIVL 7136, CERI 7204) (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

(3) (GEOL 7220) (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

(3) (GEOG 7221-8221) (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

(4). (ESCI 7404-8404). (same as CERI CERI 7230 - CERI 8230) 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

(3) (GEOG 7231-8231) 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

(3) (CERI 7240/8240) (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

(3) (GEOG 7252) (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

(3) 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

(3) 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

(3) (GEOG 7301-8301) (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

(3) (ANTH 7310) (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

(3) (ANTH 7311) (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

(3) (GEOG 7312-8312) (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

(3) 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

(4) 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

(3) 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

(1-6) 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

(4) Review of issues, problems, and research on selected topics of material science for a variety of Earth Sciences applications. Two lecture, four laboratroy hours per week. $25 materials fee. $25

materials fee. PREREQUISITE(S): ECON 7300 or permission of instructor.

ESCI 7353 - Geodynamics

(3) (GEOP 7353) (Same as CERI 7353) (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 mantel convection. PREREQUISITE or COREQUISITE: Ordinary differential equations (MATH 3120 or equivalent). PREREQUISITE(S): ECON 7300 or permission of instructor.

ESCI 7357 - Archaeol Of Southeast

(0)

ESCI 7390-7399 - Special Topics in Archaeology

(3-6) (ANTH 7380-89) 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

(3) (GEOL 7400) (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

(3) (Same as CERI 7405-CERI 8405) (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

(3) (GEOG 7430-8430) (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

(3) (GEOG 7434-8434) (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

(3) (GEOP 7440) (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

(3) (GEOG 7471-8471) (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

(3) (GEOG 7504-8504) (Same as PLAN 7504) (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 7541 - Field Studies In Geog

(3-6) (GEOG 7541-8541) (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

(3) 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

(1-9) (GEOG 7621) (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

(3) (same as PUBH 7623 - PUBH 8623). 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

(3) 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

(3) (GEOL 7701-8701) May be repeated for a maximum of 6 hours credit with a change of topic.

ESCI 7704 - Seminar In Tectonics

(3) (GEOP 7704-8704) May be repeated for a maximum of 6 hours credit with a change of topic.

ESCI 7800 - Seminar In Archaeology

(3) May be repeated for a maximum of 6 credit hours.

ESCI 7801 - Geog Thought & Mthdlgy

(3) (GEOG 7801) (GEOG 7801). Introduces student to major philosophies of geography and to methods of geographic research.

ESCI 7850 - Principles of Geoarchaeology

(4) 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

(3) (GEOG 7900) (GEOG 7900). Preparation and presentation of research paper. Grades of S, U, or IP will be given.

ESCI 7990 - Research/Earth Science

(1-9) 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

(1-6) 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

(3) 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

(3) May be repeated for a maximum of 6 hours credit with a change of topic.

ESCI 8120 - Seminar/Geomorphology

(3) (GEOG 7120-8120) (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

(3) (GEOG 7201-8201) (Same as PLAN 7302) (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

(3) (GEOG 7221-8221) (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

(4). (ESCI 7404-8404). (same as CERI 7230 - CERI 8230) Examines the reflective seismic approach to mineral exporation, 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

(3) (GEOG 7231-8231) 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

(3) (CERI 7240/8240) (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

(3) 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

(3) 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

(3) (GEOG 7301-8301) (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

(3) (GEOG 7312-8312) (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

(4) 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

(3) (Same as CERI 7405-CERI 8405) (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 Econonic Geog

(3) (GEOG 7430-8430) (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

(3) (GEOG 7434-8434) (GEOG 7434-8434). Systematic analysis of suburban and rural land use characteristics, patterns, and problems; focus on US.

ESCI 8471 - Cultural Geography

(3) (GEOG 7471-8471) (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

(3) (GEOG 7504-8504) (Same as PLAN 7504) (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

(3-6) (GEOG 7541-8541) (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

(3) 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

(3) (same as PUBH 7623 - PUBH 8623). 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

(1-3) (GEOP 7702-8702). (GEOP 7702-8702). PREREQUISITE(S): EDPR 8511 and EDPR 8541 or permission of instructor.

ESCI 8703 - Seminar In Geology

(3) (GEOL 7701-8701) May be repeated for a maximum of 6 hours credit with a change of topic.

ESCI 8704 - Seminar In Tectonics

(3) (GEOP 7704-8704) May be repeated for a maximum of 6 hours credit with a change of topic.

ESCI 8800 - Seminar In Archaeology

(3) 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

(4) 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

(1-9) Grades of S, U, or IP will be given.

Economics

ECON 6023 - Personnel Economics

3 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

(3) 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

(3) 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

(3) 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 6760-6769 - Special Topics in Economics

(1-3) Topics vary. may be repeated when topics change

ECON 6810 - Quant Economic Analysis

(3) 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

(3) 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 **

(3) 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

(3) 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

(3) Probability and statistical techniques used in economics, finance, accounting, and management science.

ECON 7126 - Economic Forecasting

(3) Statistical models for forecasting and measuring risk, growth, cyclical and seasonal patterns in business, and economic time series.

ECON 7130 - Industrial Organization

(3) How different types of markets work; nature of the firm; monopoly; oligopoly; repeated games and collusion; monopolistic competition and product differentiation; entry, accomodation 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 - Intnl Trade & Investmts

(3) 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 - Intnl Trade Theory/Pol

(3) Advanced treatment of the theory of international trade; the theory of comparative advantage, the Hecksher-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 - Intnl Monetary Thry/Pol

(3) 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

(3) 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

(3) 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

(3) A more advanced study of consumer preferences, competative 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

(3) 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

(3) 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

(3) 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 7710 - Health Care Economics **

(3) 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

(3) 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

(3) 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 **

(3) 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

(3) 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

(3) 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

(3) Estimation and statistical inference with a focus on microeconometric 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

(1-6) 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

(1-6) 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

(1-3)

ECON 7996 - Thesis

(3-6) Independent research for the master's degree. Grades of S, U, or IP will be given.

ECON 8120 - Adv Quant Econ Analysis

(3) 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

(3) Probability and statistical techniques used in economics, finance, accounting, and management science.

ECON 8126 - Economic Forecasting

(3) 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

(3) How different types of markets work; nature of the firm; monopoly; oligopoly; repeated games and collusion; monopolistic competition and product differentiation; entry, accomodation 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 - Intnl Trade Theory/Pol

(3) Advanced treatment of the theory of international trade; the theory of comparative advantage, the Hecksher-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 - Intnl Monetary Thry/Pol

(3) 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

(3) 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

(3) A more advanced study of consumer preferences, competative demand, producer theory; welfare economics, general equilibrium and basic cooperative game theory. PREREQUISITE(S): ECON 7300

ECON 8311 - Adv Microecon II

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 8710 - Health Care Economics

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Estimation and statistical inference with a focus on microeconometric 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

(3) 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

(1-6) 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

(1-6) 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

(1-3)

Education Administration

EDAD 7050 - Educational Law

(3)

Education Leadership Policy

ELPA 7560 - Small Group Leadership **

(3) (HMEC, CSED 6702) 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

(1-6) 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

(1-3) (EDFD 7006-7015/EDFD 8006-8015) May be repeated with a change in content.

EDPR 7008 - Directed Readings

(1-3) (EDFD 7008) Individually directed reading; written report required. May be repeated for a maximum of 9 credits

EDPR 7011 - Feminist Research Methods in Education

3 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

(1-6) (EDFD 7081) 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

3 (EDPS 7109-8109) Infancy and toddlerhood from developmental research issues perspective; empirical studies and contemporary issues relating to factors influencing infant development.

EDPR 7111 - Child Development & Education **

3 (EDPS 7111-8111) Major theories of child psychology and their implications for educational practices with the preschool and elementary school child.

EDPR 7112 - Adolescent Development & Educ **

3 (EDPS 7112-8112) 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 **

(3) (EDPS 7113-8113) Cognitive, emotional, and psychosocial theories and research on middle age and adult development.

EDPR 7114 - Psychology Of Aging

(3) (EDPS 7114-8114) 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

(3) 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 **

(3) Theories and research on the physical, psychological/emotional, social, cognitive, and cultural aspects of human development across the life span.

EDPR 7121 - Learning & Cognition **

(3) (EDPS 7121-8121) Major theories of learning and cognition, intelligence theories, and their application to learning environments.

EDPR 7126 - Intro to Piaget's Work

(3) Seminar to introduce Jean Piaget's epistemological and psychological studies.

EDPR 7131 - Cultural Diverse Stdnts **

(3) (EDPS 7131-8131) Cultural differences among American student populations; emphasis on family structure, socialization of children, and cultural influences on student behavior.

EDPR 7149 - Sem Cognitive Processes

(3) (EDPS 7149-8149) Classic and current learning theory research, with emphasis on recent work in cognition, constructivism, and neuropsychology applied to education.

EDPR 7150 - Motivation

(3) (EDPS 7150-8150) Theoretical and research viewpoints on motivation to learn; applications to educational settings.

EDPR 7161 - Moral Dvlpmnt & Educ

(3) (EDPS 7161-8161) Current theory and research on moral and ethical reasoning and development across the life span and educational implications.

EDPR 7165 - Social Devlpmnt/Child

(3) 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

(3) 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 **

3 (EDRS 7511) 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 8541or permission of the instructor.

EDPR 7512 - Psychomet Thry/Ed Appl

(3) (EDRS 7512-8512) 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 **

(3) (EDRS 7521) 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 - Res Meths for Schl Accntblty

(3) 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. PREREQUISITE(S): Admission to MS program in School Administration.

EDPR 7531 - Intro Modern Stat Packages

3 (EDRS 7531-8531) 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 **

(3) (EDRS 7541-8541) 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 - Stat Meth App Ed II **

(3) (EDRS 7542-8542) 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 8542 or permission of instructor. Grades of S, U, or IP will be given.

EDPR 7544 - SEM in EDU/Behav Research

(3) 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 **

(3) 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 7551 - Program Evaluation in Social Sciences **

3 (EDRS 7551-8551) 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 - Nonparmtrc Stats Appl Educatn

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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

(3) 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

(3) (EDRS 7572-8572) 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 - Behav Anlys/Case Dsgn

(3) Reviews essential theory, logic, concepts, principles, methods, and ethics of single-subject designs as they relate to behavior analysis. PREREQUISITE(S): SPED 7514/SPED 8514. Permission of instructor.

EDPR 7996 - Thesis

(1-6) 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. PREREQUISITE(S): Permission of instructor.

EDPR 8001-8006 - Special Topics in Educational Psychology and Research

(1-3) (EDFD 7006-7015/ EDFD 8006-8015) Current topics in educational psychology and research. May be repeated with a change in content.

EDPR 8008 - Directed Readings

(1-3) (EDFD 7008) 6 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

3 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

(1-6) (EDFD 7081) 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

3 (EDPS 7109-8109) Infancy and toddlerhood from developmental research issues perspective; empirical studies and contemporary issues relating to factors influencing infant development.

EDPR 8111 - Child Development & Education

3 (EDPS 7111-8111) Major theories of child psychology and their implications for educational practices with the preschool and elementary school child.

EDPR 8112 - Adolescent Development & Educ

3 (EDPS 7112-8112) 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.

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(3) (EDPS 7113-8113) Cognitive, emotional, and psychosocial theories and research on middle age and adult development.

EDPR 8114 - Psychology Of Aging

(3) (EDPS 7114-8114) Cognitive, emotional, and psychosocial developmental theories of aging and implications for life-span education.

EDPR 8116 - Chldhd Dvlpmnt in Digital Age

(3) 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

(3) Theories and research on the physical, psychological/emotional, social, cognitive, and cultural aspects of human development across the life span.

EDPR 8121 - Learning & Cognition

(3) (EDPS 7121-8121) Major theories of learning and cognition, intelligence theories, and their application to learning environments.

EDPR 8126 - Intro to Piaget's Work

(3) Seminar to introduce Jean Piaget's epistemological and psychological studies. May be repeated wiith a change in content.

EDPR 8131 - Cultural Diverse Stdnts

(3) (EDPS 7131-8131) Cultural differences among American student populations; emphasis on family structure, socialization of children, and cultural influences on student behavior.

EDPR 8149 - Sem Cognitive Processes

(3) (EDPS 7149-8149) Classic and current learning theory research, with emphasis on recent work in cognition, constructivism, and neuropsychology applied to education.

EDPR 8150 - Motivation

(3) (EDPS 7150-8150) Theoretical and research viewpoints on motivation to learn; applications to educational settings.

EDPR 8161 - Moral Dvlpmnt & Educ

(3) (EDPS 7161-8161) Current theory and research on moral and ethical reasoning and development across the life span and educational implications.

EDPR 8165 - Social Devlpmnt/Child

(3) 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

(3) (EDPS 8171) 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

(3) 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 **

3 (EDRS 7511) 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

(3) (EDRS 7512-8512) 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

(3) (EDRS 8519) Systematic investigation of current multivariate methods in the field of educational statistics.

EDPR 8521 - Intro Res Design & Methodology

(3) (EDPR 7521). 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

3 (EDRS 7531-8531) 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 **

(3) (EDRS 7541-8541) 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 - Stat Meth App Ed II **

(3) (EDRS 7542-8542) 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 or permission of instructor.

EDPR 8544 - SEM in EDU/Behav Research

(3) 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 **

(3) 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 Meth Educ **

(3) (EDRS 8549) 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 **

3 (EDRS 7551-8551) 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

(3) 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 - Nonparmtrc Stats Appl Educatn **

(3) 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 **

(3) 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 8562 - Designing Qualitative Research **

(3) 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 **

(3) 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 **

(3) 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

(3) 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

(3) (EDRS 7572-8572) 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 - Behav Anlys/Case Dsgn

(3) Reviews essential theory, logic, concepts, principles, methods, and ethics of single-subject designs as they relate to behavior analysis. PREREQUISITE(S): SPED 7514 -SPED 8514

EDPR 9000 - Dissertation

(1-12) (EDFD 9000) 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 6202 - Electricl Power Systems

(3) 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

(3) 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

(3) 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

(3) EECE 4206. 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

(3) 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

(1) 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

(3) Steady state and transient solutions of transmission line equations; plane waves; antennas in telecommunications.

EECE 6221 - Electronics III

(4) 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

(3) 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

(3) 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

(3) Frequency and time domain; modulation, random signal theory; autocorrelation; noise, communication systems.

EECE 6232 - Discrete Signal Process

(3) Introduction to discrete-time signal analysis; discrete system concepts, discrete-time Fourier analysis, sampling of continuous-time signals, z-transform, and transform analysis of discrete systems; structures for discrete-time systems and discrete filter design techniques.

EECE 6235 - Probabilistic Sys Anlys

(3) 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 Physcl Elct

(3) 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

(3) 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 **

(3) 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

(3) General equations of physical linear systems and their transfer functions; transient analysis and stability of control systems; Bode plots, Nichols plot, Routh-

Hurwitz criterion, root locus method, introduction to compensation techniques and systems in state space.

EECE 6252 - Digital Control Systems

(3) 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

(1) 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

(1) 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

(3) Procedural and object-oriented programming techniques using C and C++. Introduction to Unix. COREQUISITE(S): TECH 7401.

EECE 6273 - Database Engineering

(3) 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

(3) 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

(3) 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

(4) 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

(3) 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

(3) 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

(3) 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

(3) 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 of use of synthesis tools, programmable logic, microcontrollers, and development of working embedded systems. PREREQUISITE(S): Permission of instructor.

EECE 6720 - Intro Artificial Intelg

(3) (Same as COMP 6720.) (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

(3) (Same as COMP 6730.) (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 Visualization

(3) (Same as COMP 6731) (Same as COMP 6731). 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): Permission of instructor.

EECE 6741 - Introduction to Neurocomputing

(3) (same as COMP 6741). Topics include connectionist data-driven AI; Learning algorithms; Least-mean squares; Supervised learning algorithms (perceptrons. backpropagation and its variants, recurrent neural nets); Unsupervised methods (Hebbian, competitive and reinforcement learning); Deep Learning; Computing platforms for neural nets; case studies. PREREQUISITE(S): COMP 2150 and MATH 3242, or permission of instructor.

EECE 6900-6909 - Special Topics in Electrical and Computer Engineering

(1-3) Topics are varied.

EECE 7001 - Professional Develpmnt

(3) 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

(3) (Same as COMP 7012-COMP 8012) (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

(3) 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

(3) Advanced studies in electromagnetic fields, radiation, and propagation of energy. PREREQUISITE(S): Permission of instructor.

EECE 7214 - Image Processing

(3) 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 **

(3) 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

(3) 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 **

(3) 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

3 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Design and applications of analog communication systems; transmitter and receiver technologies.

EECE 7233 - Power Electronics

(3) Power semiconductor switches, rectifiers, phase-controlled rectifiers, and other power control devices; power control applications.

EECE 7234 - VLSI Design

(3) 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

(3) 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

(3) 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 **

(3) 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

(3) 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 Telecommunictn

(3) 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

(3) Implementation and standards for communications systems; cellular telephony standards and/or wireless data standards utilizing CDMA techniques.

EECE 7255 - Digital Communications

(3) Source coding, signal representations, optimum receivers for A WGN channels, channel capacity issues, block codes, and convolution codes.

EECE 7261 - Arch & Design Dig Comp

(3) 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

(3) (Same as COMP 7750-8750) (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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Introduction to capabilities of state-of-the-art microprocessors and their supporting components.

EECE 7310 - Power System Stability/Control

(3) 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

(3) 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

(3) 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

(3) Cascade and feedback compensation; analysis and control of nonlinear systems; introduction to optimal techniques.

EECE 7522 - Stoch/Adapt Cntrl Thry

(3) Principles and applications of deterministic and statistical design; random processes in automatic control.

EECE 7523 - Thry Optical Cntrol Sys

(3) 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

(3) Principles of parameter estimation and application to systems engineering.

EECE 7720 - Artificial Intelligence

(3) (Same as COMP 7720-COMP 8720) (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

(3) (Same as COMP 7740-COMP 8740) (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

(1-3) Topics are varied.

EECE 7991 - Independent Study I

(1-3) 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

(1-3) 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

(3) 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

(1-12) MasterÂ¿s thesis. Only six hours are applicable to the degree. Grades of S, U, or IP will be given.

EECE 8001 - Professional Develpmnt

(3) 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

(3) (Same as COMP 7012-COMP 8012) (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

(3) 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 Electrmgntc Field

(3) Advanced studies in electromagnetic fields, radiation, and propagation of energy.

EECE 8214 - Image Processing

(3) 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 **

(3) Application of discrete transform theory to spectral analysis, digital filters, random signal analysis.

EECE 8216 - Computer Vision

(3) 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 **

(3) 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

3 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

(3) 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

(3) 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 8230 - Solid State Devices

(3) Internal function, limitations, and applications of unique components found in modern telecommunication designs; electro-optic devices, detectors, resonators, antenna, and negative resistance components.

EECE 8231 - Communicatn Electronics

(3) Analysis and design of small and large signal amplifiers; multistage amplifiers; analysis and design of oscillators; feedback and stability in amplifier design.

EECE 8232 - Analog Comm Circ Dsgn

(3) Design and applications of analog communication systems; transmitter and receiver technologies.

EECE 8233 - Power Electronics

(3) Power semiconductor switches, rectifiers, phase-controlled rectifiers, and other power control devices; power control applications.

EECE 8234 - VLSI Design

(3) 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

(3) 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

(3) 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 **

(3) 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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(3) Introduction to entropy and channel capacity, group codes, block codes, cyclic codes; application of coding techniques to improve system reliability; error correcting codes.

EECE 8253 - Wireless Telecommunictn

(3) 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 8254 - Modern Telecom

(3) Implementation and standards for communications systems; cellular telephony standards and/or wireless data standards utilizing CDMA techniques.

EECE 8255 - Digital Communications

(3) Source coding, signal representations, optimum receivers for A WGN channels, channel capacity issues, block codes, and convolution codes.

EECE 8261 - Arch & Design Dig Comp

(3) 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

(3) (Same as COMP 7750-8750) (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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Introduction to capabilities of state-of-the-art microprocessors and their supporting components. PREREQUISITE(S): Permission of instructor.

EECE 8310 - Power System Stability/Control

(3) 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

(3) 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

(3) 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

(3) Cascade and feedback compensation; analysis and control of nonlinear systems; introduction to optimal techniques.

EECE 8522 - Stoch/Adapt Cntrl Thry

(3) Principles and applications of deterministic and statistical design; random processes in automatic control. PREREQUISITE(S): Permission of instructor.

EECE 8523 - Thry Optical Cntrol Sys

(3) 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

(3) Principles of parameter estimation and application to systems engineering.

EECE 8720 - Artificial Intelligence

(3) (Same as COMP 7720-COMP 8720) (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

(3) (Same as COMP 7740-COMP 8740) (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

(1-3) Topics are varied.

EECE 8991 - Projects I

(1-3) 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

(1-3) 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

(1-12) Grades of S, U, or IP will be given.

Elementary Education

ELED 6250 - Tech Tools Thnkng/Lrng

(3)

Engineering Technology

TECH 6234 - Microproc Interface Technology

(4) 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 Technolgy

(3) (CETH) Hypertext Markup Language (HTML), XML, and script languages. Three lecture hours per week.

TECH 6262 - Modern Programming

(3) (CETH) 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

(4) (CETH) 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

(4) Operating system structure, memory management (physical, virtual memory), process management (processes, threads, scheduling, synchronization, deadlocks), device management (driver, buffers, queues), file management (implementation, abstraction), installation and configuration of services within UNIX/LINUX operating system, and performance. Three lecture hours, three laboratory hours per week.

TECH 6281 - Computer Network Technology

(4) (CETH) 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

(3) (METH) 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

(3) (METH) 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

(3) (METH) 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

(3) 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

(3) (METH) 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

(3) (METH) (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

(3) (METH) 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

(3) (METH) 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

(3) (METH) 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

(3) (METH) 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

(4) (EETH) 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

(3) (EETH) 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

(3) 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 **

3 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 conferances. Written and oral presentations will be stressed in the course. PREREQUISITE(S): Permission of instructor.

TECH 7105 - Project Plan & Scheduling **

(3) 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

(3) 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/Appl

(3) 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

(3) 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

(3) 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 **

(3) 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

(3) 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 **

(3) 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

(3) 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

(3) 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 **

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 **

(1-3) Independent investigation of a problem selected in consultation with instructor; report required.Proposal required for attaining a permit.

TECH 7992 - Projects II

(1-3) Independent investigation of a problem selected in consultation with instructor; report required. Proposal required for attaining a permit.

TECH 7993 - Internship In Engr Tech

(1-3) 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

(1) 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

(1-6) 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

(3) 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

(3) 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

(3) tudy 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

(3) 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

(3) 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

(3) 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

(3-6) 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 test and language. Course may be repeated, but only 6 credit hours may be earned towards a degree.

ENGL 6618 - Document Design **

(3) 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 **

(3) 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 6701 - Being an English Teacher

(3) The nature and teaching of English. NOTE: This course does not contribute toward teacher licensure.

ENGL 7000 - Literary Research

(3) 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

(3) Study and application of interpretive strategies to texts pertinent to professional writing and composition studies.

ENGL 7003 - Thry/Prac Tchng Comp

(3) 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 **

(3) 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

(3) COMM 7010 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 **

(3) (Same as COMM 7012-COMM 8012) (Same as COMM 7012-8012). Examines current issues in health communication research, including patient-provider relationships, new technologies and health promotion, and health organizations. May be repeated for a maximum of 9 credit hours.

ENGL 7013 - Wkshp Hlth Care Writing **

(3) 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 **

(3) 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

(3)

ENGL 7100 - Independent Study **

(1-3) 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

(3) Studies of selected literary texts from the Middle Ages.

ENGL 7230 - Chaucer

(3) Studies of works by Geoffrey Chaucer in Middle English. PREREQUISITE(S): Permission of instructor.

ENGL 7242 - English Renaissance Lit

(3) Survey of the major works of the Renaissance. PREREQUISITE(S): ENGL 7601.

ENGL 7254 - English Lit 17c

(3) Study of the poetry and prose of seventeenth-century England. PREREQUISITE(S): ENGL 7603.

ENGL 7255 - Shakespeare

(3) 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

(3) Study of Milton's poetry.

ENGL 7264 - 18th-Century British Lit

(3) Study of drama, fiction, poetry, and essays from Restoration and eighteenth-century Britain.

ENGL 7276 - English Lit Romantic

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Survey of African American literature from the Colonial Period to 1850.

ENGL 7330 - Afr-Amer Lit 1850-1900 **

(3) Survey of African American literature from 1850-1900.

ENGL 7332 - Literature of the African Diaspora

(3) 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

(3) 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

(3) Examination of the critical movements in African American Literary Theory from 1900 to present.

ENGL 7337 - African-American Literature, 1930-1988

(3) Survey of African American literature from 1930-1988

ENGL 7338 - Amiri Baraka and the Black Arts Movement

(3) Studies in the work of Amiri Baraka and other writers of the Black Arts Movement.

ENGL 7350 - Rhetorical Theory

(3) (Same as COMM 7350-COMM 8350) (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

(3) (Same as COMM 7371-COMM 8371) (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

(3) Intensive study of American novels.

ENGL 7392 - American Poetry

(3) Intensive study of American poetry.

ENGL 7393 - American Drama

(3) Intensive study of American drama.

ENGL 7394 - Modern American Lit

(3) Advanced study of American literature produced between 1900 and 1950.

ENGL 7395 - Am Literary Movements

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 **

(3) 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 **

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 instructorÂ¿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

(3) 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

(3) 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

(3) 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 **

(3) Development of English from a minor Germanic dialect to a major international language.

ENGL 7507 - Empirical Mthds Ling Rsrch

(3) Develop research questions and hypotheses, prepare language surveys, use linguistic databases, perform qualitative and quanitative 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

(3) History, design, creation, interpretation, and applications of corpora in applied language research.

ENGL 7509 - African American Linguistics

(3) 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

(3) 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 **

(3) 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

(3) Study of English language structures emphasizing how form and meaning are integrally related.

ENGL 7514 - Sociolinguistics **

(3) 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 **

(3) Application of linguistic theory to analysis of literature, nature of literary language, and linguistic options open to writers.

ENGL 7516 - Phonetics & Phonology

(3) 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

(3) 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 **

(3-6) 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 **

(3) Survey of relation of linguistic principles to second language acquisition.

ENGL 7532 - Principles of Skills Assessment **

(3) 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 **

(3) 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

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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

(3) Intensive study of specialized areas in English linguistics. Maybe repeated up to 9 hours with change of topic.

ENGL 7601 - Creative Nonfiction Wkshp

(3) 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

(3) 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

(3) Emphasis on the examination and the discussion of poetry written by students. May be repeated 10 times for a maximum of 30 credit hours. PREREQUISITE(S): EDPR 7123 and ESMS 7201, or permission of instructor. Grades of A-F, or IP will be given.

ENGL 7604 - Creative Writing Wkshp

(3) Emphasis on examination and discussion of fiction, poetry, or creative nonfiction written by students. May be repeated for a maximum of 6 credit hours with change of genre. PREREQUISITE(S): EDPR 7523 , EDPR 7541 or permission of instructor.

ENGL 7605 - Adv Grad Fiction Wkshp

(3) 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

(3) 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

(3) 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

(3) History of literary criticism and theory, classical to modern.

ENGL 7702 - Contemp Crit Theory

(3) 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

(3) 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

(3) 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

(3) A multidisciplinary exploration of the purposes, technologies, and contexts for written communication.

ENGL 7806 - Resch Meth In Writing

(3) 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 **

(3) 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. PREREQUISITE(S): FIR 7070 or equivalent. Grades of S, U, or IP will be given.

ENGL 7808 - Wksp/Sci & Techn Wrtg **

(3) 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. PREREQUISITE(S): FIR 3410 and FIR 3720. Grades of S, U, or IP will be given.

ENGL 7809 - Technical Editing **

(3) 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. PREREQUISITE(S): FIR 3710.

ENGL 7811 - Internship Prof Wrtng

(3) 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

PREREQUISITE(S): FIR 3710. Grades of S, U, or IP will be given.

ENGL 7812 - Mphs Urban Wrtng Ins I

(3) (Same as ICL 7304-8304) (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

(3) (Same as ICL 7305-8305) (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

(3) Examines different periods and issues of rhetorical history each semester. One semester will consider Greek rhetoric (beginnings throught 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 **

(3) 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

(3) (Same as COMM 7819-COMM 8819) (Same as COMM 7819-8819). This course examines scientific and technical communication from phetorical 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

(3) (Same as COMM 7820-COMM 8820) (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

(3) 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

(3) 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

(3) 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

(3) 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

(1-6) 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

(1-3) A course for MA students in Professional Writing or Composition Studies who choose to produce a project or portfolio instead of a thesis. PREREQUISITE(S): FIR 7155 or equivalent.

ENGL 8000 - Literary Research

(3) 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

(3) Study and application of interpretive strategies to texts pertinent to professional writing and composition studies. PREREQUISITE(S): FIR 7410 or permission of instructor.

ENGL 8002 - Reading for Comps

(3) 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

(3) 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. PREREQUISITE(S): FIR 7155 or equivalent.

ENGL 8008 - Thry/Prac Tchng Online **

(3) 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

(3) COMM 8010. 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 **

(3) (Same as COMM 7012-COMM 8012) (Same as COMM 7012-8012). Examines current issues in health communication research, including patient-provider relationships, new technologies and health promotion, and health organizations. May be repeated for a maximum of 9 credit hours.

ENGL 8013 - Wkshp Hlth Care Writing **

(3) 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. PREREQUISITE(S): FIR 7155 or equivalent.

ENGL 8014 - Wkshp Public Hlth Care Writing

(3) 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. PREREQUISITE(S): FIR 7155 or equivalent.

ENGL 8020-8049 - Special Topics in English

(3)

ENGL 8100 - Independent Study

(1-3) 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

(3) Studies of selected literary texts from the Middle Ages. PREREQUISITE(S): 3.00 overall GPA and completed 15 hours of coursework.

ENGL 8230 - Chaucer

(3) Studies of works by Geoffrey Chaucer in Middle English.

ENGL 8242 - English Renaissance Li

(3) Survey of the major works of the Renaissance. PREREQUISITE(S): FIR 7410 or permission of instructor.

ENGL 8254 - English Lit 17c

(3) Study of the poetry and prose of seventeenth-century England. PREREQUISITE(S): FIR 7410 or 3710 or equivalent.

ENGL 8255 - Shakespeare

(3) 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

(3) Study of Milton's poetry.

ENGL 8264 - 18th-Century British Lit

(3) Study of drama, fiction, poetry, and essays from Restoration and eighteenth-century Britain. PREREQUISITE(S): FIR 7155 or equivalent.

ENGL 8276 - English Lit Romatic

(3) Exploration of major authors, themes, and/or movements in British Romantic literature. Maybe repeated up to 9 hours with change of topic. PREREQUISITE(S): FIR 7155 or equivalent.

ENGL 8278 - Victorian Literature

(3) 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 PREREQUISITE(S): FIR 8810.

ENGL 8281 - Stud Early Am Lit

(3) 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 PREREQUISITE(S): FIR 7155.

ENGL 8292 - Modern British Poetry

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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. PREREQUISITE(S): FREN 3301; RECOMMENDED: FREN 3411.

ENGL 8329 - Afr-Amer Lit/Beg to 1850

(3) Survey of African American literature from the Colonial Period to 1850. PREREQUISITE(S): FREN 3301. RECOMMENDED: FREN 3411.

ENGL 8330 - Afr-Amer Lit 1850-1900 **

(3) Survey of African American literature from 1850-1900. PREREQUISITE(S): FREN 3301 RECOMMENDED: FREN 3411.

ENGL 8332 - Lit of the African Diaspora

(3) 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

(3) 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. PREREQUISITE(S): FREN 3301 or permission of instructor.

ENGL 8336 - Afr-Amer Literary Theory

(3) Examination of the critical movements in African American Literary Theory from 1900 to present.

ENGL 8337 - Afr-Amer Lit, 1930-1988

(3) Survey of African American literature from 1930-1988

ENGL 8338 - Baraka and Black Arts

(3) Studies in the work of Amiri Baraka and other writers of the Black Arts Movement.

ENGL 8350 - Rhetorical Theory

(3) (Same as COMM 7350-COMM 8350) (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

(3) (Same as COMM 7371-COMM 8371) (Same as COMM 7371-8371). Examines principal modes of contemporary rhetorical analysis. May be repeated for a maximum of 9 credit hours. PREREQUISITE(S): FREN 7101 or equivalent.

ENGL 8391 - American Novel

(3) Intensive study of American novels.

ENGL 8392 - American Poetry

(3) Intensive study of American poetry.

ENGL 8393 - American Drama

(3) Intensive study of American drama. May be repeated for a maximum of 9 credit hours when topic changes.

ENGL 8394 - Modern American Lit

(3) Advanced study of American literature produced between 1900 and 1950.

ENGL 8395 - Am Literary Movements

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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. PREREQUISITE(S): GERM 7101 or equivalent.

ENGL 8464 - Contmp American Lit

(3) Authors, works, genres, and literary styles in development of contemporary American literature.

ENGL 8466 - World Lit in Translation

(3) 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 **

(3) 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 **

(3) 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

(3) 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

(3) 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

(3) 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. PREREQUISITE(S): POLS 6101 or permission of graduate coordinator.

ENGL 8473 - Verbal/Visual Texts

(3) 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 instructorÂ¿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

(3) 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

(3) Advanced social, political, and cultural theories that structure the understanding of cultural texts. May be repeated for a maximum of 6 credit hours. PREREQUISITE(S): HADM 6101.

ENGL 8485 - Lit Arts Programming

(3) 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 **

(3) 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

(3) Develop research questions and hypotheses, prepare language surveys, use linguistic databases, perform qualitative and quanitative 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

(3) History, design, creation, interpretation, and applications of corpora in applied language research.

ENGL 8509 - African American Linguistics

(3) Study of African American Vernacular English, including historical development, linguistic features, correclation with ethnic identity, fictional representation, contributions to General American English, and controversies concerning use in schools.

ENGL 8510 - Gender and Language

(3) 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

(3) 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

(3) Study of English language structures emphasizing how form and meaning are integrally related.

ENGL 8514 - Sociolinguistics **

(3) 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 **

(3) Application of linguistic theory to analysis of literature, nature of literary language, and linguistic options open to writers.

ENGL 8516 - Phonetics & Phonology

(3) Articulatory and linguistic phonetics, phonetic transcription, suprasegmental phonology, overview of English phonology, and information on teaching English pronunciation to speakers of other languages. PREREQUISITE(S): Successful completion of a minimum of 26 hours in the Health Administration program and permission of graduate coordinator

ENGL 8517 - Discourse Analysis

(3) 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 **

(3-6) 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 **

(3) Survey of relation of linguistic principles to second language acquisition.

ENGL 8532 - Theor Skill Assess ESL **

(3) Application of theories of teaching second language skills with emphasis on testing in a second language.

ENGL 8533 - Meth/Tech ESL In K-12 **

(3) Techniques and resources for working with children and adolescents for whom English is a second language.

ENGL 8534 - Second Lang Acquisition

(3) Theories of second language acquisition, development of second language proficiency, and research in bilingualism.

ENGL 8535 - ESL Grammar **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) History of literary criticism and theory, classical to modern.

ENGL 8702 - Contemp Crit Theory

(3) Examination of major movements in contemporary literary criticism and theory.

ENGL 8801 - History Composition

(3) 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

(3) 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

(3) A multidisciplinary exploration of the purposes, technologies, and contexts for written communication.

ENGL 8806 - Resch Meth In Writing

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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

(3) 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

(3) (Same as ICL 7304-8304) (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

(3) (Same as ICL 7305-8305) (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

(3) Examines different periods and issues of rhetorical history each semester. One semester will consider Greek rhetoric (beginnings throught 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 **

(3) Theoretical and research-based focus on managing and developing collaborative writing projects and processes.

ENGL 8819 - Rhetoric Of Science

(3) (Same as COMM 7819-COMM 8819) (Same as COMM 7819-8819). This course examines scientific and technical communication from phetorical 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

(3) (Same as COMM 7820-COMM 8820) (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

(3) Examines relationship between rhetorical and composition theory and contemporary philosophy, especially poststructuralism, neo-pragmatism, and hermeneutics.

ENGL 8823 - Topics In Composition

(3) 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

(3) 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

(3) 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. PREREQUISITE(S): Admission to TEP or licensed to teach.

ENGL 9000 - Dissertation

(1-9) 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

(3) (EXSS 6000) 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, 3410, 3415, 3450, 3603, 3703, 3800, 3803; HSCI 3800, or permission of instructor.

ESMS 6010 - Supp/Food/Drugs Health

(3) (EXSS 6010) 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

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 Intrp

(3) (EXSS 6406) 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

(3) (EXSS 6603) Advanced study of training principles for strength and conditioning programs and their underlying physiological bases. PREREQUISITE(S): BIOL 2010/2011, 2020/2021;

ESMS 3050, 3405, 3450, 3603, 3703, 3800, 3803; HPRO 2100, or permission of instructor. (F/Su).

ESMS 6902-6911 - Special Topics in Exercise, Sport, and Movement Sciences

(3) (EXSS 6902) Current topics in exercise, sport, and movement sciences. May be repeated with change in topic. See online class listings for topic.

ESMS 7007 - Nutraceuticls/Diet Supp Hlth

(3) In depth review of several classes of nutraceuticals and dietary supplements with relevance to human health, disease prevention, and physical performance improvement. Both in vitro and in vivo animal and human models are used to provide a mechanistic basis for proposed actions of various nutritional ingredients on target physiological systems. Intended for graduate students studying Exercise Science, Physiology, Biochemistry, Nutrition, Medicine, Nursing, or related fields. Permission of instructor.

ESMS 7020 - Pub/Prop in Health & Biomed

(3) (EXSS 7020). 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

(3) (PHED 7123)(EXSS 7123) 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

(3) (PHED 7133)(EXSS 7133) 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

(1-3) (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

(3) (EXSS 7152) (HPRO 7152/NUTR 7152/PETE 7152) 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

(3) (PHED 7163)(EXSS 7163) 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

(3) (EXSS 7173) Survey of literature related to psychological aspects of participation in sport, exercise, and physical activity settings.

ESMS 7201 - Phys Exer Musculoskltl

(3) (EXSS 7201) 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

(3) (EXSS 7202) 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

(3) (EXSS 7210) 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

(3) (EXSS 7220) 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

(3) (EXSS 7230) 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

(3) (EXSS 7240) 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

(3) (EXSS 7250) 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

(3) 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 - Coach-Musclsketl Antmy Strngth

(3) (EXSS 7300) Gross structure and function of the musculoskeletal system as related to purposeful movement of the human body during weight training activities. NOTE: May not be used for elective course credit in ESMS.

ESMS 7532 - Resrch/Sport Neuromechn

(3) (EXSS 7532) 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

(3) (PHED 7542)(EXSS 7542) 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

(3) (PHED 7542) (EXSS 7800) 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 7850 or serve as a capstone experience. PREREQUISITE(S): Permission of instructor. Grades of S, U, or IP will be given.

ESMS 7850 - Research Lab Residency in ESMS

(1-6) (EXSS 7850) Capstone experience focused on the development and/or application of research evidence to professional practice in ESMS. Involves 40 contact hours per credit hour and is typically undertaken in one of the ESMS Human Performance Laboratories, although other UM campus sites focused on evidenced-based practice may be considered for approval. PREREQUISITE(S): Completion of 18 credit hours in the program of study with a minimum graduate GPA of 3.00 and permission of Major Professor, ESMS Program Coordinator, and Director of the laboratory at which the residency is to be performed.

ESMS 7902-7911 - Special Topics Exercise, Sport and Movement Science

(1-3) (PHED 7903-13) (EXSS 7902-11) Current topics in exercise, sport and movement science. May be repeated with change in topic.

ESMS 7950 - Applied Project in ESMS

(1-6) (EXSS 7950) 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 8007 - Nutraceuticals/Diet Supp Hlth

(3) (EXSS 8007) In depth review of several classes of nutraceuticals and dietary supplements with relevance to human health, disease prevention, and physical performance improvement. Both in vitro and in vivo animal and human models are used to provide a mechanistic basis for proposed actions of various nutritional ingredients on target physiological systems. Intended for graduate students studying Exercise Science, Physiology, Biochemistry, Nutrition, Medicine, Nursing, or related fields. PREREQUISITE(S): Permission of instructor.

ESMS 8020 - Pub/Prop in Health & Biomed

(3) (EXSS 8020). 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

(1-6) (EXSS 8081) 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

(3) (8123) 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

(3) (PHED 7133)(EXSS 8133) 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

(1-3) (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

(3) (PHED 8163)(EXSS 8163) 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

(3) (EXSS 8173) Survey of literature related to psychological aspects of participation in sport, exercise, and physical activity settings.

ESMS 8201 - Phys Exer Musculoskit

(3) (EXSS 8201) 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

(3) (EXSS 8202) 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

(3) (EXSS 8210) 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 Skltl Mscl Str/Fnct

(3) (EXSS 8220) 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

(3) (EXSS 8230) 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

(3) (EXSS 8240) 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

(3) (EXSS 8250) 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

(3) 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 8532 - Resrch/Sport Neuromechn

(3) (EXSS 8532) 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

(3) (PHED 7542)(EXSS 8542) 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

(1-3) (EXSS 8902-11) Current topics in exercise, sport and movement sciences. May be repeated with change in topic.

Experiential Learning Credit

ELC 7115 - Experiential Learning Credit

(1) 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

(3) 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

(3) 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

(3) 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

(3) 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 **

(3) 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 **

(3) 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 **

(3) Terminology, legislation, principles, and analytical techniques pertaining to financing of real estate; perspective of lender, residential borrower, and income property borrower.

FIR 6331 - Stock Portfolio Mgmt

(3) (Same as FIR 4331) (Same as FIR 4331). Development and monitoring of investment portfolio by explaining possible investment alternatives; terminology and analysis techniques necessary to fulfull future financial goals. Undergraduate students will assist graduate students in managing a real equity portfolio of $500,000.

FIR 6340 - Real Estate Appraisal **

(3) 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 **

(3) 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 **

(3) Financing international trade and investments; foreign exchange markets and exchange rates; balance of payments; current developments in international financial cooperation.

FIR 6610 - Cases Managerial Fin

(3) 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

(3)` 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

(3) 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 **

(3) 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

(3) 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

(3) 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

(3) 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 & Lbility Insur

(3) 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

(3) 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 **

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

(3) (7010) (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 **

(3) 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

(2) Advanced capital budgeting theory and practice including different types of cash flow estimation and analysis, equivalent annual annuity, levelized and unlevelized costs, and product pricing; covers theory and practice of a firm's capital structure, divident policy, stock repurchasing decisions, and financial planning and forecasting.

FIR 7170 - Multinational Financial Mgmt

(3) 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

(3) Analysis of operation and regulation of international financial markets for derivatives (options, futures, and swaps), equities, debt, and currencies.

FIR 7173 - Financial Analys/Certification **

(3) Course is desinged to accomplish three objectives: (1) Prepare students for careers in financial markets, (2) Develop investments skills for person 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 **

(3) 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

(3) 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

(3) course will examine the decisions to minize 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

(3) 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 Analys

(3) 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 **

(3) 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

(3) 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

(3) 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

(3) 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

(3) Market microstructure theory; empirical underpinnings, empirical research, and critical contemporary issues.

FIR 7725 - Eqty Mkts:Trad/Struct

(3) 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

(3) By permission of instructor.

FIR 7810 - Adv Financial Mgmt

(3) 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 - Quantitative Finan App

(3) 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, spreadsheet analysis, linear programming, and regression analysis. Extensive use of computer software packages.

FIR 7910 - Problems In Fir

(1-6) 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

(3) 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

(1-6) 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

(3) (7620) (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

(3) 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

(3) Advanced theoretical and empirical topics in investments and portfolio management. May be epeated for credit when topice vary. Grades of A-F will be given.

FIR 8721 - Financial Derivatives

(3) 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

(3) Market microstructure theory; empirical underpinnings, empirical research, and critical contemporary issues. Grades of A-F will be given.

FIR 8725 - Financial Mkts: Trad/Struct

(3) 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

(3) By permission of instructor.

FIR 8810 - Adv Financial Mgmt

(3) 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

(3) Advanced theoretical and empirical topics in corporate finance. Grades of A-F will be given.

FIR 8840 - Quantitative Finan App

(3) Advanced applications of quantitative, statistical, and mathematical tools in finance. Grades of A-F will be given.

FIR 8850 - Seminar In Finance

(3) Advanced optics in finance. May be repeated for credit when topics vary. Grades of A-F will be given.

FIR 8910 - Problems In Finance

(1-6) 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

(3) Practical, syntactical, and lexical usage of contemporary French. Grades of S, U, or IP will be given.

FREN 6307 - French Lit & Civ to 1789

(3) A survey of French literature and civilization from the Middle Ages to the Revolution.

FREN 6308 - French Lit & Civ 1789-Present

(3) A survey of French literature and civilization from 1789 to the present.

FREN 6310 - French Translation

(3) An introduction to translation, focusing on practical applications and techniques for translating a variety of text types and authentic documents.

FREN 6415 - Francophone Literature

(3) 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

(3)

FREN 6801 - Cont France/Francophone World

(3) 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

(3) 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

(3) 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

(3) (6305) (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

(3) 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

(3) Literary movements, individual authors, or groups of authors of the nineteenth and twentieth centuries.

FREN 7492 - Resch In French Stds

(1-6) 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

(3) Survey of literary movements and major authors of the nineteenth century with readings in all major genres.

FREN 7502 - 20th Century French Literature

(3) Analysis of the major movements and authors of twentieth-century French literature.

FREN 7503 - Advanced French Pedagogy

(3) 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

(3) 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

(3) 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

(3-6) 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

(3) 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

(3) 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

(3) 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

(1) 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: LeadershipSkills

(1) 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 **

(3) 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 **

(3) 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 **

(3) 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

(3) (POLS 7-8601) (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

(3) 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 **

(3) 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 **

(3) 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 - Leadershp/Org Chg in Hlth Care **

(3) 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

(3) 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

(3) 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

(3) 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 **

(3) 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 **

(3) 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 **

(3) Independent investigation of research problems or directed readings in selected area of health administration.

HADM 7130 - Quality Tools in HC Management

(3) 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 **

(3) 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

(3) 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

(1-6) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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

(3) 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 **

(3) (POLS 7-8605) (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

(3) BA 7634. 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

(3) Arranged on an individual basis for graduate students in health administration only.

HADM 7705-7715 - Special Topics in Health Administration

(1-3) Intensive study of selected topics in health administration.

HADM 7718 - Med Tech Purchasing/Sales

(3) 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

(1-6) 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

(3) 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

(3) 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

(3) 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

(3) (POLS 7-8601) (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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Independent investigation of research problems or directed readings in selected area of health administration.

HADM 8140 - Population Health Management

(3) 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

(3) 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

(3) 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

(3) (POLS 7-8605) (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

(3) 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

(3) 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

(1-9) 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 HS **

(3) 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. PREREQUISISTE: Permission of Instructor

HMSE 7403 - Measurement/Evaluation

(3) (PHED 7403) (PHED 7403). Includes selection, application, and evaluation of certain tests appropriate to Health Studies.

HMSE 7996 - Thesis

(1-6) (FITW/HLTH/PHED /RECR 7996) 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.

Health Promotion

HPRO 6202-6020 - Workshops in HPRO

(1-3) (HLTH 6202-20) 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

(3) Current topics in health promotion. May be repeated with change in topic.

HPRO 7122 - Current Readings HPRO **

(3) (HLTH 7122) 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

(1-3) (HLTH 7142) Graduate seminar in health promotion. Grades of S, U, or IP will be given.

HPRO 7152 - Problems In HPRO

(3) ESMS 7152/NUTR 7152/PETE 7152 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 **

(3) (FITW 7182) 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 **

(3) 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

(3) (HLTH 7702) (HLTH 7702). Extensive examination of timely and important issues in the health promotion area.

HPRO 7703 - Life Phys Act & Hlth

(3) 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

(3) 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 **

(3) 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 **

(3) (HLTH 7712) Introduction to selected diseases of special concern in public health practice with emphasis on epidemiologic models and methods.

HPRO 7722 - Hlth Intrvntn Thry/Apps **

(3) (HLTH 7722) 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

(3) 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 **

(3) 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

(3) 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 **

(3-6) 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

(1-3) (HLTH 7092-11) Current topics in health promotion. May be repeated with change in topic.

HPRO 7950 - Applied Project in HPRO **

(1-6) 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

(3) 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 **

(1-6) 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

(3) Organizational aspects of community education programs, including administration and suprevision 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

(3) 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

(3) Principles of curriculum building in application to adult basic education students. Grades of A-F will be given.

HIAD 7210 - Foundations of Academic Advising

3 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

3 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

(3) 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 **

(1-6) 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, LDPD, and CCTL programs or by permission of instructor.

HIAD 7410 - Overview Higher Educ **

(3) (EDAS 7190-8190) 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 **

(3) (EDAS 7191-8191) 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 **

(3) 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

(3) 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 **

(3) (COUN 7613-8613) 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

(3) (COUN 7672-8672) 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 **

(3) (Same as COUN 7622-8622.) 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 **

(3) (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. Resttricted 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 **

(3) 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

(3) 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

3 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

(3) (HIAD 7200-8200) 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

(3) (HIAD 7204-8204) 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 **

(3) (HIAD 7250) 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

(3) 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 **

(3) (HIAD 7256-8256) 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 **

(3) 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 **

(3) (HIAD 7201-8201) 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 **

(3) 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 **

(3) 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 8000 - Change Theory in Higher Educ

(3) 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 **

(1-6) 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

(3) 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

(3) 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

(3) 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

3 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

(3) Learn about journals, tailoring articles to journals, writing a research article, working with editors and reviewers.

HIAD 8401 - Higher Educ Adminstratn **

(3) (EDAS 7192-8192) 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 **

(3) Current topics, research problems, new studies, and needed inquiries in higher and adult education.

HIAD 8404 - Supervised Research **

(1-6) 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

(3) (HIAD 7258-8258) (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

(3) 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 **

(3) (EDAS 7190-8190) 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 **

(3) (EDAS 7191-8191) 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

(3) (EDFD 7002-8002) 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 **

(3) 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 **

(3) (EDAS 8380) (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 **

(3) (EDAS 8320) 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

(3) 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 **

(3) (COUN 7613-8613) 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

(3) (COUN 7672-8672) 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 **

(3) (Same as COUN 7622-8622.) 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 **

(3) (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

(3) (HIAD 7200-8200) 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 **

(3) (HIAD 7250) 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

(3) 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 **

(3) (HIAD 7256-8256) 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 **

(3) 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 **

(3) (HIAD 7201-8201) 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 **

(3) 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 **

(3) 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.

History

HIST 6020 - Internship In History

(1-12) 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

(3) Applied history covering oral history theory, research, and interviewing procedures.

HIST 6050-6069 - Special Topics in History

(1-3) Intensive study of selected topics in History.

HIST 6071 - History of the Caribbean

3 Introduction to the social, economic, political, and cultural history of the Caribbean. Major themes and events studied include European conquest and colonization after 1492; transatlantic slavery and plantation societies in the 17th and 18th centuries; revolution and nation-building beginning in the late 18th century; 20th century decolonizations; and contemporary issues of migration and globalization. The eminent anthropologist and historian of slavery Sidney Mintz once called the Caribbean the "crucible of modernity." From the oppression of plantation slavery to the anarchic criminality of the pirates, from the realism of a Fidel Castro to the idealism of Bob Marley, this course follows Mintz's observation through 500 years of Caribbean history. Through your study of political, economic, social, and cultural forces, this course will provide you with an introduction to the major themes of the Caribbean past: discovery and conquest, colonialism and revolution, slavery and emancipation, nationalism and capitalism, migration and globalism. With Mintz's observation in mind and through an overview of these major events and themes, this course hopes to provide you with both an understanding of the forces that formed the particular history of Caribbean, as well as an understanding of the key role that the history of the Caribbean played in the formation of both European and American modernity. The experiences of Caribbean history provide an important object lesson for our own experience of the globalizing world.

HIST 6101 - Early Modern Britain, 1485-1815

3 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

3 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

(3) 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

(3) 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 6145 - History of Modern Germany

(3) 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 - Hapsburg Central Europe 1740-1918

(3) 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

(3) 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

3 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

(3) 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

(3) 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

(3) Critical comparative examination of twentieth-century revolutionary movements in Latin America, focusing on Mexico, Guatemala, Cuba, and Chile.

HIST 6222 - Race/Class Latin America

(3) 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

(3) 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 Ward; 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-libralism and its discontents.

HIST 6260 - World Since 1945 **

(3) "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 **

(3) Political, diplomatic, social, and religious developments in the Middle East from 1800 to present.

HIST 6276 - The Arab-Israeli Conflict

(3) 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 **

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 **

(3)

HIST 6294 - Modern Japan 1800-Present **

(3)

HIST 6320 - Ancient Near East

(3) From the beginnings of Mesopotamia down through the great empires of Assyria, Babylon, and Persia.

HIST 6321 - Greek Experience **

(3) Politics, society, and culture in ancient Greece to Alexander the Great.

HIST 6322 - The Roman World

(3) "The Roman Republic and the Roman Empire".

HIST 6323 - Egypt Of The Pharaohs **

(3) A historical survey of ancient Egyptian civilization, covering major political and social developments and topics such as religion, writing, and literature, Egypt's relations with the rest of Africa, and sample problems that illustrate how Egyptologists approach the past. May be repeated when focus area changes.

HIST 6361 - Hist Byzantine Empire **

(3) 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

(3) 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

3 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

3 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. Repeatable up to 6 hours.

HIST 6403 - European Empires

3 A history of European colonial empires from the 17th to the 20th century. Topics include capitalism and commerce; the transatlantic slave trade; colonial science and social science; intercultural exchange; scientific racism and the civilizing mission; empire and popular culture; anticolonial nationalism and decolonization; and neocolonialism and globalization. In the modern era, empire was a common form of political organization and between 1700-1950, most of humanity lived within the borders of one empire or another. Following the Second World War, this political form disappeared from the world stage as the nation-state replaced it. Despite the disappearance of formal empires, many of their structures, practices, ideas, and political forms persist into the present. This course examines the history of European empires from the formation of the "new empires" in the 18th century to our current era of globalization. Taking a comparative approach, this course will examines how empires were formed; the relationship between imperialism and capitalism and commerce; the transatlantic slave trade; colonial science and social science; intercultural exchange; scientific racism and the civilizing mission; empire and popular culture; anticolonial nationalism and decolonization; and neocolonialism and globalization. It concludes by asking what exactly is "postcolonial" about our allegedly postcolonial present.

HIST 6440 - French Revolution **

(3) 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 6461 - Europe in the Age of Total War, 1914-1945 **

(3) Examination of a tumultuous period in European and world history, including the First World War, the foundation of the Soviet Union, the rise of fascism in Italy and Germany, economic and political crises, imperialism, World War II, and the Holocaust.

HIST 6463 - Europe, 1945 - Present

3 A history of Europe from World War II to present, including the war and its legacies, the Cold War, the 1960s, European unification, the post-Soviet era, and contemporary debates around immigration and European identity. In 1945, from Paris to Moscow, most of Europe lay in ruins. Cities were ruined, their modern infrastructures smashed. Millions were dead and millions more were displaced from their homes. Occupying American and Soviet armies kept the peace. Former leaders were prosecuted for their part in the war, in collaboration, and in the murder of 6 million Jews and millions of other minorities and "undesirables." As the Italian filmmaker Roberto Rossellini suggested, 1945 was in many ways Europe's "Year Zero." And yet, by 1955, most of the continent had achieved a level of prosperity and social well-being never before seen in its history. The economy was booming, growing at annual rates as high as 15%; new cities were built and old ones repaired; unemployment was so low that workers were brought in from abroad to meet the need for labor; and new government social programs created comprehensive welfare states that guaranteed healthcare, education, employment, and a pension "from cradle to grave." But the continent was also divided between the capitalist West and the communist East, each side of the Iron Curtain protected by a superpower: the United States and the USSR. While Europe prospered, in many ways the wounds of the war remained unhealed. This course studies the history of Postwar Europe from the last days of the Second World War up to present crises

around austerity, immigration and the European Union. Topics include but are not limited to: the end of the war and its legacies; the Cold War and the division of Europe; the reconstruction and remaking of Europe; social democracy, socialism, and the welfare state; film, music, and fashion of the postwar period; decolonization and labor migration; 1960s social movements, including antiwar, feminist, student, immigrants, and gay and lesbian movements; the Prague Spring and dissent in Eastern Europe; 1989 and the post-Soviet era; European unification; deindustrialization and austerity; and contemporary debates around immigration and European identity.

HIST 6620 - Colonial America to 1783 **

(3) Political development and economic, social, and cultural institutions of English colonies in America, including origins and conduct of American Revolution.

HIST 6630 - New Nation/1783-1815 **

(3) COREQUISITE(S): ICL 7993

HIST 6640 - Jackson Amer 1815-1850 **

(3)

HIST 6680 - Emr Mod Am 1877-1914

(3)

HIST 6701 - U S 1914 To W War II **

(3)

HIST 6702 - U S Since W War II **

(3) COREQUISITE(S): ICL 7993

HIST 6801 - Black Memphis

3 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

(3) 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

(3) 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 **

(3) 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 **

(3) 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

(3) The social, political, economic, and cultural history of African American women from the sixteenth century to the present.

HIST 6861 - Parks/People/Public Pol

(3) 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 **

(3) Historical consideration of children and childhood in American society from early 17th century to present.

HIST 6871 - U S Urban History **

(3) Development of American cities, including formation of local social, economic, and political institutions and impact of urbanization on US.

HIST 6879 - Africa To The Americas

(3) Surveys arrival of Africans in western hemisphere to expansion of antebellum slavery in the US Lower South by 1820; examines African diaspora, colonial slavery, impact of slavery upon formation of US, and development of African American culture; also explores relationships between enslaved and free Blacks, Europeans, and Native Americans.

HIST 6880 - Slavery/Freedom/Segretn

(3) Examines social, political, and economic developments; antebellum slavery and freedom impact on westward expansion; Civil War emancipation and post-war construction of black freedom; development and impact of legal and extra-legal segregation; black nationalism and pan-Africanism; and Progressivism through the beginnings of the Great Migration. COREQUISITE(S): ICL 7993

HIST 6882 - Civil Rights Movement **

(3) Struggle for African American equality, with emphasis on key civil rights issues, events, leaders, and strategies.

HIST 6941 - Hist American Indian

(3) Role of the Indian in American history.

HIST 7011 - Phil & Theory of History

(3) Speculative philosophy of history and recent problems in analytical philosophy of history.

HIST 7012 - Directed Readings **

(1-3) 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

(3) 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

(3) 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 **

(3) 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

(3) Topics within periods or problems that cross periods or subject areas.

HIST 7060 - Women/Gender Historiography

(3) 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 **

(3) May be repeated when the content varies.

HIST 7070 - Research Seminar **

(1-3) Emphasis on original research and writing in topics drawn from the fields generally covered by the Studies courses.

HIST 7100 - Global Historiography

(3) 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 **

(3)

HIST 7120 - Studies English History

(3)

HIST 7160 - Studies Russian Hist **

(3)

HIST 7210 - Studies Latin Am Hist **

(3)

HIST 7270 - Studies Near East Hist **

(3)

HIST 7272 - Historiography Mod Middle East

(3) 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

(3) Grades of S/U, IP will be given.

HIST 7290 - Studies Asian History

(3)

HIST 7310 - Ancient Historiography

(3) 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 **

(3)

HIST 7370 - Studies Medv/Renai Hist **

(3)

HIST 7400 - Studies Early Mod Hist

(3)

HIST 7430 - European Historiography **

(3) 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 **

(3)

HIST 7601 - US Historiography to 1877 **

(3) 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 **

(3) 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 **

(3)

HIST 7680 - Studies U S After 1877 **

(3)

HIST 7880 - Af Amer Historiography to 1800 **

(3) 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

(3) 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

(3) 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 **

(3)

HIST 7884 - Af Amer History and Profession **

(3) 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 **

(3)

HIST 7991 - Independent Readings

(1-12) Arranged on an individual basis for history students only.

HIST 7996 - Thesis **

(1-9) 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

(3) Speculative philosophy of history and recent problems in analytical philosophy of history.

HIST 8012 - Directed Readings

(1-3) 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

(3) 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

(3) 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 projectâ€™s goals are required.

HIST 8025 - Principles&Practices Hist Ed

(3) 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

(3) Topics within periods or problems that cross periods or subject areas.

HIST 8060 - Women/Gender Historiography

(3) 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

(3) May be repeated when the content varies.

HIST 8070 - Research Seminar

(1-3) 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

(3) 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

(3) Grades of S, U, or IP will be given.

HIST 8120 - Studies English History

(3) Grades of S, U, or IP will be given.

HIST 8160 - Studies Russian Hist

(3) S/U

HIST 8210 - Studies Latin Am Hist

(3) Grades of S, U, or IP will be given.

HIST 8270 - Studies Near East Hist

(3) Grades of S, U, or IP will be given.

HIST 8272 - Historiography Mod Middle East

(3) 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

(3)

HIST 8290 - Studies Asian History

(3)

HIST 8310 - Ancient Historiography

(3) 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

(3)

HIST 8370 - Studies Medv/Renai Hist

(3)

HIST 8400 - Studies Early Mod Hist

(3)

HIST 8430 - European Historiography

(3) 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

(3) May be repeated when topics change.

HIST 8601 - US Historiography to 1877

(3) 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

(3) 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

(3) COREQUISITE(S): ICL 7993

HIST 8680 - Studies U S After 1877

(3)

HIST 8880 - Af Amer Historiography to 1800

(3) 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

(3) 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

(3) 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

(3) Grades of S, U, or IP will be given.

HIST 8884 - Af Amer History and Profession

(3) 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

(3)

HIST 8990 - Reading for/Writing Comps

(1-12) 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

(1-12) 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

(1-12) No more than 12 hours may count toward the degree.

Hospitality and Resort Management

HPRM 6320 - Hospitality Services Mktg

(3) 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

(3) 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

(3) 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

(3) (7020) 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

(3) 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

(1) (7029) The course will consist of readings, projects, case studies, and PREREQUISITE(S): Psychology graduate student or permission of instructor.

HPRM 7141 - Experiential Learning Credit

(1-9) 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

(1-3)

HPRM 7200 - Hospitality Studies Seminar

(2) 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 **

(3) (7030) 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 **

(3) 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 & Revnue Max

(3) (7039) 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

(3) 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 **

(3) 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

(3) 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 y 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 lo me hospitality industry

HPRM 7442 - Adv Strtg Mgmt in Hosp

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(1-6) 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.

Instruction and Curriculum Leadership

ICL 6121 - Lbry Mtrl Yng Peop/Adlts

(3) 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

(3) Consideration of aerospace content and flight experiences; emphasizes classroom applications.

ICL 6762 - Adv Aerospace Ed Schls

(3) 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

(1-3) (CIED 6950-59) 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

(3) 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

(3) Principles of organizing and developing the curriculum and curriculum directions, trends, and patterns.

ICL 7002 - Curriculum Leadership

(3) Application of curriculum and leadership theory to modern educational practices; emphasis on developing leadership styles to ensure implementation.

ICL 7003 - Curric Design/Evalatn

(3) Considers a variety of curriculum designs and their implications for educational practice.

ICL 7004 - Innovative Curricula

(3) 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

(3) 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

(3) 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

(1-3) Interpersonal and group process skills needed for teaching.

ICL 7021 - Prof Develop Semnr II

(1-3) Specialty teaching area in pedagogical skills application.

ICL 7022 - Prof Develop Semnr III

(1-3) Teacher roles, professional relationships, and professional development.

ICL 7030 - Assessment & Evaluation **

(3) 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

(2) 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

(3) Curriculum, methods, and materials for teaching mathematics, science, and social studies to elementary school students.

ICL 7051 - Simulation

(1-3) Surveying, analyzing, and designing simulation activities appropriate for classroom situations; individual and group participatory activities.

ICL 7054 - Creativity Tchg/Curric

(3) 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

(3) Major movements related to values education and analysis of strategies applicable to educational settings.

ICL 7059 - Models of Instruction **

(3) Theory and research for instructional planning and assessing of selected models of instruction.

ICL 7080 - Instr Multiethnic Schl

(3) 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

(3) 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

(1) Structured observation and participation in schools; emphasis on management and instructional issues. Field experiences: 10 hours.

ICL 7103 - Tchg Hlth Phy Act Nutr

(3) 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 Lrnrs

(3) 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 **

(3) 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 **

(3) 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

(3) Analysis of curriculum theories, materials, and practices as they affect the child's potential and growth.

ICL 7132 - Catalog/Classification **

(3) Introduction to principles and techniques of cataloging and classification of books and other library materials.

ICL 7133 - School Library Admin **

(3) 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 **

(3) 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

(3) Analysis of contemporary issues and trends in elementary education.

ICL 7151-7159 - Special Topics in Instruction and Curriculum Leadership

(1-3) Topics are varied.

ICL 7160 - Mdrn Meth Scndry Educ

(3) Secondary school teaching and how the secondary school can perform its role most effectively.

ICL 7161 - Methods/Middle School Science

(3) 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

(3) 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

(3) 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

(3) 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

(3) Investigation of emerging concepts of the middle school and trends in classroom procedures and curriculum.

ICL 7168 - Semnr Secondary Educ

(3) Analysis of problems, current issues, and trends in secondary education.

ICL 7172 - Spec Mthds Soc Stu Educ **

(3) Critical analysis and research on significant issues in the field of secondary social studies education.

ICL 7174 - Spec Mthds For Lang Ed **

(3) (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 **

(3) 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 **

(3) 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 **

(3) Methods of teaching adolescent literature including fiction, non-fiction, drama, and poetry.

ICL 7303 - Eng/Lan Comp Secnd Schl **

(3) 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 Wrtng II

(3) 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 **

(3) 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

(3) 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 7310 - Supptng Cont Spec Inst

(3) 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

(3) 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

(3) 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 **

(3) 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 **

(3) 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

(3) 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

3 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

3 Models of elementary and middle school mathematics teaching and learning. Focus on research involving students' mathematical thinking.

ICL 7508 - Sem Mathematics Educ **

(3) 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

(3) Models of science instruction; history, philosophy, and research supporting these models. PREREQUISITE(S): Teacher licensure

ICL 7601 - Elem Science Curriculum

(3) 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 **

(3) 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 **

(3) 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

(3) 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 **

(3) A survey of selected problems and topics in science education.

ICL 7650 - Adv Elem Soc Studies

(3) 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 **

(3) 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 **

(3) Analysis of programs and curricular materials for secondary social studies education.

ICL 7654 - Methods Elem Soc Studies

(3) 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 **

3 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 **

(3) Historical examination and analysis of the development of social studies in education.

ICL 7658 - Seminar Soc Stu Education

(3) Survey and evaluation of social and controversial issues and trends in the social studies education.

ICL 7659 - Cold War Education **

(3) 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

(3) 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

(3) 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

(3) .

ICL 7705 - Adv Mgng Lrng Environ

(3) 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

(3) 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

(3) 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

(3) 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 **

(3) 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

(3) 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

(3) 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

(3) Focus on student-centered instructional models with particular attention to approaches that integrate science, engineering, technology, and mathematics.

ICL 7723 - Equity in STEM Education

(3) 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 **

(3) 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 **

(3) 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 **

(3-9) 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

(3) Historical and societal perceptions and definitions of the talented and mentally gifted individuals; their social, emotional and learning processes.

ICL 7802 - Spec Populations/Gifted

(3) 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

(3-9) 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

(3-9) 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

(3-9) 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

(3-9) 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

(3-9) 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 **

(3-9) 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

(3)

ICL 7810 - Teacher Leader Practicum

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3-9) 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

(1-3) (CIED 7950-59-8950-59) 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

(3) 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

(1-9) 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 **

(3) 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. PREREQUISTE: 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 **

(3) 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

(3) 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

(1-6) 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

(1-12) 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

(1-6) 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

(3) Application of curriculum and leadership theory to modern educational practices; emphasis on developing leadership styles to ensure implementation.

ICL 8003 - Curric Design/Evalatn

(3) Considers a variety of curriculum designs and their implications for educational practice.

ICL 8004 - Innovative Curricula

(3) Generic issues, problems, processes, and strategies relative to changes occurring with the implementation of innovative curricula.

ICL 8005 - The Nature of Knowledge

(3) 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 to them to conduct research grounded in understandings of theory, knowledge, and scholarship.

ICL 8008 - Sem Curric Improvement

(3) 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

(1-3) Surveying, analyzing, and designing simulation activities appropriate for classroom situations; individual and group participatory activities.

ICL 8054 - Creativity Tchg/Curric

(3) 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

(3) Major movements related to values education and analysis of strategies applicable to educational settings.

ICL 8082 - Seminar in Urban Education

(3) 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

(3) 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

(3) 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

(3) Analysis of curriculum theories, materials, and practices as they affect the child's potential and growth.

PREREQUISITE(S):

ICL 8138 - Sem In Elem Educ

(3) Analysis of contemporary issues and trends in elementary education.

ICL 8151-8159 - Special Topics in Instruction and Curriculum Leadership

(1-3) Topics are varied. May be repeated when topics change

ICL 8160 - Mdrn Meth Scndry Educ

(3) Secondary school teaching and how the secondary school can perform its role most effectively.

ICL 8165 - The Middle School

(3) Investigation of emerging concepts of the middle school and trends in classroom procedures and curriculum.

ICL 8172 - Spec Mthds Soc Stu Edu

(3) Critical analysis and research on significant issues in the field of secondary social studies education.

ICL 8200 - Prof Sem/Doctoral Stdnt

(3) 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

(3) 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 **

(3) Methods of teaching children's literature in the elementary school, including storytelling, dramatization, and choral speech work.

ICL 8302 - Tchg Lit To Adolescents **

(3) Methods of teaching adolescent literature including fiction, non-fiction, drama, and poetry.

ICL 8303 - Eng/Lan Comp Secnd Schl

(3) Emphasis on developing and implementing a sequential curriculum in secondary school language and composition. Field Experience: 8 hours.

ICL 8308 - Seminar Engl/Lang Arts

(3) 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

(3) 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

(3) 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

(3) 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

(3) Issues and trends in elementary and middle school mathematics curriculum. Appropriate current reports of professional groups will be considered.

ICL 8502 - Tchg Mathematics SCED

(3) 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 **

(3) Analysis of the secondary mathematics curriculum as it relates to sound educational practices.

ICL 8505 - Advanced Workshop in K-8 Mathematics

3 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

3 Models of elementary and middle school mathematics teaching and learning. Focus on research involving students' mathematical thinking.

ICL 8508 - Sem Mathematics Educ

(3) 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

(3) Models of science instruction; history, philosophy, and research supporting these models. PREREQUISITE(S): Teacher licensure

ICL 8601 - Elem Science Curriculum

(3) 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

(3) 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

(3) A survey of selected problems and topics in science education.

ICL 8650 - Adv Elem Soc Studies

(3) 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

(3) Consideration of principles and techniques for teaching secondary social studies. Field experience: 8 hours.

ICL 8653 - Mid/Sec Soc Std Curric

(3) Analysis of programs and curricular materials for secondary social studies education.

ICL 8655 - Constructivism & the New Social Studies **

3 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 **

(3) Historical examination and analysis of the development of social studies in education.

ICL 8658 - Seminar Soc Stu Education

(3) Survey and evaluation of social and controversial issues and trends in the social studies education.

ICL 8659 - Cold War Education **

(3) 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

(3) 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

(3) 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

(3) (CIED 7704-8804).

ICL 8705 - Adv Mgng Lrng Environ

(3) 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

(3) 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

(3) 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

(3) 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

(3) Focus on student-centered instructional models with particular attention to approaches that integrate science, engineering, technology, and mathematics.

ICL 8723 - Equity in STEM Education

(3) 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

(3) Historical and societal perceptions and definitions of the talented and mentally gifted individuals; their social, emotional and learning processes.

ICL 8802 - Spec Populations/Gifted

(3) 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

(3-9) 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

(3-9) 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

(3-9) 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

(3-9) 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

(3-9) 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

(3-9) 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

(3)

ICL 8810 - Teacher Leader Practicum

(3) 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 Giftd/Ac Tltd

(3) 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 Giftd/Ac Tltd

(3) Examination of provisions of services to gifted students in other than traditional enrichment programs.

ICL 8850 - Suprvsn Student Tchg

(3) 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

(3) 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

(1-3) (CIED 7950-59/CIED 8950-59) 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

(3) 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

(1-9) 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

(3) 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 **

(3-6) 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

(1-3) 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

(1-6) 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 **

(1-12) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) Analysis of issues and trends related to instructional computing and instructional technology in K-12 classroom.

IDT 7064 - EdTech & Instructl Development **

(3) 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 **

(3) 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

(3) Application of instructional design principles to solve performance and instructional problems in educational and non-educational environments.

IDT 7072 - Seminar in Online Instruction **

(3) 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 Lnrng Envrn

(3) 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 **

(3) A critical examination of instructional design theories from the perspective of supporting research and application.

IDT 7075 - Instrctnl/Performnce Consultng **

(3) 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

(3) 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 satistics course.

IDT 7078 - Seminr Instrct Design&Technlgy **

(3) Professional and research problems in instructional strategies, design, and technology. May be repeated once with a change in topic.

IDT 7080 - Learning Experience Design **

(3) 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 Interactve Lrng Envirnmt I **

(3) 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 Intractve Lrng Envirnmt II **

(3) 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

(3) 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 **

(3-9) 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

(3) 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

(3) 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 **

(3) 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 **

(3) 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 **

(3) Analysis of issues and trends related to instructional computing and instructional technology in K-23 classroom.

IDT 8064 - EdTech & Instructil Development **

(3) 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

(3) 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

(3) Application of instructional design principles to solve performance and instructional problems in educational and non-educational environments.

IDT 8072 - Seminar in Online Instruction

(3) 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

(3) 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

(3) A critical examination of instructional design theories from the perspective of supporting research and application.

IDT 8075 - Instrctnl/Performnce Consultng

(3) 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

(3) 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 - Seminr Instrct Design&Technlgy **

(3) Professional and research problems in instructional strategies, design, and technology. May be repeated once with a change in topic.

IDT 8080 - Learning Experience Design

(3) 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 Interactve Lrng Envirnmt I

(3) 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 **

(1-3) 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

3 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 Intractve Lrng Envirnmt II **

(3) 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 **

(3) 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

(3) 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 **

(3) 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 **

3 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 - Practicm Instr Design/Technlgy **

(3) 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

(1) 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

(3) 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

(3) 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

(3) 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

(3) 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 6326 - Advertising Research

3 4000/6000 cognate Fundamentals in advertising research; nature of the market, appropriate advertising strategies, message effectiveness and media audiences; primary and secondary research, sampling, questionnaire design, survey, and data processing and analysis. No PREREQUISITE(S): Graduate status and permission of instructor

ADVR 6327 - Media Planning

3 6000-level cognate of ADVR 4327 Procedures for analyzing the advertising situation, writing advertising and media goals and setting advertising appropriations. Use of a microcomputer program to develop and evaluate optimum advertising media schedules. PREREQUISITE(S): Graduate status and permission of instructor

ADVR 6328 - Strategic Adv Campaigns

(3) Development of an integrative campaign and its execution in include all advertising and promotion applications. (Sp).

ADVR 6800-6802 - Special Topics Advertising

(3) Intensive study of a single critical issue or current topic. Topics may vary PREREQUISITE(S): Permission of instructor.

CRMM 6140 - Publication Design

(3) (same as CRMM 4140, ART 4140-ART 6140). 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

(3) Introduction of web design software of Dreamweaver and Sublime Text; development of website projects; incorporation of target audience analysis and web usability; presentation of website projects from servers. PREREQUISITE(S): 21 hours in MATH courses including MATH 2110 and one of MATH 2701, 2702, or permission of instructor.

CRMM 6526 - Advanced Photojournalism

(3) Advanced skills and photojournalism techniques for still photography and video; emphasis on action, sports, fashion, food, and portraits. PREREQUISITE(S): Permission of the instructor.

CRMM 6550 - Web Publish II/: html/CSS

(3) 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 6900 - Creative Media Lab

3 (same as CRMM 4900) 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

(3) (same as JOUR 4150). 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

(3) 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

(3) 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 6170 - Business Reporting/Writing

(3) (same as JOUR 4170) 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

(3) 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 6190 - Opinion Writing/Reporting

(3) (same as JOUR 4190) 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

(3) 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. May be repeated for a maximum of six hours when topics vary. PREREQUISITE(S): JRSM 2121 and JOUR 3526. Students at graduate level must get the instructor's permission.

JOUR 6629 - TV News Writing/Reporting

(3) 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

(3) 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

(3) Writing and reporting news and news feature stories on issues concerning social justice.

JOUR 6806-6809 - Special Topics in Journalism

(3) Intensive study of a single critical issue or current topic. Topics may vary PREREQUISITE(S): Permission of instructor.

JOUR 6998 - Multimedia News Lab

3 (same as JOUR 4998) Write, produce content for an online news publication that will house multimedia stories on important, complex topics in the city of Memphis; 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

(3) 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 **

(3) Advanced study of critical problems faced by mass media, with exploration of complexities that cause them.

JRSM 6704 - Issues in Sport and Media

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 **

(1) Self-paced, online orientation for incoming master's students, addressing skills and issues relevant to graduate studies in mass communication. Grades of S/U, IP will be given.

JRSM 7015 - Advanced Media Writing **

(3) 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

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(1-3) Topics are varied. PREREQUISITE(S): Permission of instructor.

JRSM 7320 - Mass Media & Diversity **

(3) Research and analysis of the relationship among mass media, women, and minorities.

JRSM 7330 - Social Media & Community Engagement **

(3) 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 **

(3) 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

(3) Contemporary social trends, public relations roles and responsibilities, and applicable public relations theory.

JRSM 7410 - Advanced Crisis Communication **

(3) 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 - Analytics and Evaluation **

(3) 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

(3) 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 **

(3) 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

(3) 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 organziational leadership. Will also include discussion of brand equity management and organizational leadership.

JRSM 7422 - Writing for Strategic Media **

(3) 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

(3) 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 **

(3) Use of visual comminication skills to present qualitative and quantitative data. Emphasis on effective communication, user experience and multimedia presentation.

JRSM 7530 - Visual Media Theory & Practice **

(3) 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 **

(3) 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

(3) 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

JRSM 7700 - Individual Research **

(3) 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 **

(3) 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 **

(2) Development of digital portfolio of professional and/or academic work and presentation. S/U PREREQUISITE(S): Permission of instructor.

JRSM 7996 - Thesis **

(1-6) PREREQUISITE(S): Permission of instructor.

JRSM 7998 - Professional Project **

(1-6) 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 8025 - Law Mass Communication

(3) 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

(3) 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

3 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

3 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

(3) 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 **

(1-3) Topics are varied. PREREQUISITE(S): Permission of instructor.

JRSM 8320 - Mass Media & Diversity

(3) Research and analysis of the relationship among mass media, women, and minorities.

JRSM 8330 - Social Media & Community Engagement

(3) 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

(3) 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

(3) 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 8700 - Individual Research

(3) 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

(3) 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;

PBRL 6301 - Event Planning for HPRM & PR

(3) (Same as HPRM 4301) 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. May be repeated for maximum of 9 credit hours

PBRL 6410 - Public Relations Research

3 (same as PBRL 4410) Identifying, characterizing and evaluating stakeholder groups and alternative channels of communication; formal research procedures including sampling, instrument design, information gathering, data processing, analysis and reporting. PREREQUISITE(S): Graduate status & permission of instructor

PBRL 6430 - Media Relations

3 (same as PBRL 4430) 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

(3) 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 6440 - Public Rel Campaigns

(3) Application of theory, research data, and problem-solving techniques in development of comprehensive public relations strategies.

PBRL 6803-6805 - Special Topics in Public Relation

(3) Intensive study of a single critical issue or current topic. Topics may vary PREREQUISITE(S): Permission of instructor.

Judaic Studies

JDST 6840 - Israel/Antqty In Mdrnty

(3) (Same as ANTH 6840). (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

(3) (Same as ANTH 6841, ESCI 6841). (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

(3) 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

(3) Topics are varied.

LALI 6441 - Dante

(3) Vita Nuova and Divina Commedia; presented in English. Offered off-numbered spring semesters. PREREQUISITE(S): MATH 7643.

LALI 6493 - Contemporary French Lit

(3) Emphasis on widely translated, well-known works by major French writers; presented in English translation.

LALI 6890 - Literary Criticism

(3) 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

(1-3) 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

(3) (EDFD 7003-8003) 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

(3) 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 **

(3) (EDAS 7100) 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 **

(3) 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

(3) 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

(1-3) (EDAS 7712-22/EDAS 8712-22) In-depth study of selected topics in educational leadership. May be repeated with change in topic.

LEAD 7061 - Practicum In Ldrship **

(1-3) (EDAS 7170-8170) 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

(1-6) (EDAS 7996) 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

(1-3) Grades of A-F, or IP will be given.

LEAD 7081 - Rdng/Rsrch High/Adlt Ed

(1-3) (EDAS 7790-8790) Grades of A-F, or IP will be given.

LEAD 7082 - Rdng/Rsrch Ed Ldrship

(1-3) (EDAS 7710-8710) Grades of A-F, or IP will be given.

LEAD 7083 - Rdgs/Rsrch Educ Plcy

(1-3) (EDFD 7008-8008) Grades of A-F, or IP will be given.

LEAD 7084 - Rdng/Rsrch Scl/Com Rel

(1-3) (EDAS 7700-8700) Grades of A-F, or IP will be given.

LEAD 7085 - Rdng/Rsrch Ed Supv

(1-3) (EDAS 7750-8750) Grades of A-F, or IP will be given.

LEAD 7086 - Rdng/Rsrch Fin/Bus Mgmt

(1-3) (EDAS 7730-8730) Grades of A-F, or IP will be given.

LEAD 7087 - Rdng/Rsrch Prsnl Negtn

(1-3) (EDAS 7760-8760) Grades of A-F, or IP will be given.

LEAD 7088 - Rdng/Rsrch Educ Law

(1-3) (EDAS 7780-8780) (EDAS 7780-8780). Grades of A-F, or IP will be given. Offered fall semester. PREREQUISITE(S): Permission of the instructor

LEAD 7089 - Rdng/Rsrch Plnt/Trnsptn

(1-3) (EDAS 7740-8740) Grades of A-F, or IP will be given.

LEAD 7090 - Rdgs/Res Hist of Educ

(1-3) Grades of A-F, or IP will be given.

LEAD 7100 - Education & Community **

(3) (EDAS 7000) 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 **

(1-9) (EDAS 7171-8171) 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 **

(3) (HIAD 7255-8255) 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

(1-15) 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

(1-6) 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

(1-6) 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 **

(3) (EDAS 8800) 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 **

(3) (EDFD 7001-8001) 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 **

(3) 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

(3) 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

(3) 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

(1-3) (EDAS 7712-22/EDAS 8712-22) In-depth study of selected topics in educational leadership. May be repeated with change in topic.

LEAD 8061 - Practicum In Ldrship

(1-3) (EDAS 7170-8170) 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

(1-6) (EDAS 7996) 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

(1-3) Grades of A-F, or IP will be given.

LEAD 8081 - Rdng/Rsrch High/Adlt Ed **

(1-3) (EDAS 7790-8790) 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

(1-3) (EDAS 7710-8710) Grades of A-F, or IP will be given.

LEAD 8083 - Rdgs/Rsrch Educ Plcy

(1-3) (EDFD 7008-8008) Grades of A-F, or IP will be given.

LEAD 8084 - Rdng/Rsrch Scl/Com Rel

(1-3) (EDAS 7700-8700) Grades of A-F, or IP will be given.

LEAD 8085 - Rdng/Rsrch Ed Supv

(1-3) (EDAS 7750-8750) Grades of A-F, or IP will be given.

LEAD 8086 - Rdng/Rsrch Fin/Bus Mgmt

(1-3) (EDAS 7730-8730) Grades of A-F, or IP will be given.

LEAD 8087 - Rdng/Rsrch Prsnl Negtn

(1-3) (EDAS 7760-8760) Grades of A-F, or IP will be given.

LEAD 8088 - Rdng/Rsrch Educ Law

(1-3) (EDAS 7780-8780) Grades of A-F, or IP will be given.

LEAD 8089 - Rdng/Rsrch Plnt/Trnsptn

(1-3) (EDAS 7740-8740) Grades of A-F, or IP will be given.

LEAD 8090 - Rdgs/Res Hist of Educ

(1-3) Grades of A-F, or IP will be given.

LEAD 8140 - Planning Ed Change

(3) 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

(1-9) (EDAS 7171-8171) 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 **

(3) (HIAD 7255-8255) 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

(1-15) 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 **

(1-9) (EDAS 9000) Grades of S, U, or IP will be given.

Leadership and Policy Studies

LDPS 7000 - Current Issue/Leadershp

LDPS 7110 - Leadership Explr Sem

(3) (EDAS 7400) 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

(3) 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

(1-6) (EDAS 7050) Theory and methodology of educational supervision, with emphasis on instructional leadership; differences in roles for various supervisory personnel; project based.

LDPS 7121 - Personnel Admin

(3) (EDAS 7160-8160) Educational personnel administration and policy including: human resource management, staffing goals, policies, recruitment, induction, roles, and professional development.

LDPS 7131 - School Business Mgmt

(1-3) (EDAS 7130-8130) 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

(3) 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 Improvmnt

(3) 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 **

(3) (EDAS 7111-8111 & 7311-8311) 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 principalship.

LDPS 7150 - Educational Law **

(3) (EDAS 7180-8180) 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

(3) (EDAS 7810-8810) 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

(3) (EDAS 7811-8811) 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

(3) Special issues of current interest related to American educational policies and practices.

LDPS 7311 - Issues Phil Educ

(3) (EDFD 7021-8021) 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

(3) 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

(3) 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

(3) (EDFD 7033-8033) Conceptual and empirical analyses of political and social issues related to US education.

LDPS 8111 - Ed Admin Perform Lab

(1-6) (EDAS 7370-8370) 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

(3) 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

(3) (EDAS 7510-8510) Problems and issues derived from trends in contemporary culture that impact on educational leadership; emphasis on instructional leadership.

LDPS 8121 - Personnel Admin

(3) (EDAS 7160-8160) Educational personnel administration and policy including: human resource management, staffing goals, policies, recruitment, induction, roles, and professional development.

LDPS 8132 - School Finance

(3) 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

(3) (EDAS 8220) Economic aspects of education in the United States and other developed nations.

LDPS 8140 - Ldrshp Instructionl Improvmnt **

(3) 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 **

(3) Analysis of current legislation and case law and its impact on education.

LDPS 8180 - Pltcs & Pwr Ed Ldrshp

(3) (EDAS 7810-8810) 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

(3) (EDAS 7811-8811) 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 **

(3) Special issues of current interest related to American educational policies and practices.

LDPS 8310 - Phil Anly & Educ Plcy

(3) (EDFD 7022-8022) Exploration and use of philosophical analytical skills for assessing educational policies and practices.

LDPS 8311 - Issues Phil Educ

(3) (EDFD 7021-8021) 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 **

(3) 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 **

(3) 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

(3) (EDFD 7033-8033) Conceptual and empirical analyses of political and social issues related to US education.

Linguistics

LING 7101 - Intro To Linguistics I

(3) 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

(3) (Same as ICL 7174) (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

(3) 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.

Management

MGMT 7030 - Management & Orgnztn

(3) (7000) (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

(3) 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

(3) Study of human behavior, attitudes, and performance within an organizational setting; motivation, leadership, communication, group dynamics, organizational hange 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 **

(2) 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

(3) 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 **

(3) (7410) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(2) 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

(3) 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

(3) 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

(3) 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 Anlys

(3) 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

(3) 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

(3) 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

(3) 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

(1-6) 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

(3) Topics vary.

MGMT 7996 - Thesis

(3-6) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Literature of strategic management, including contributions of other fields to strategic management. PREREQUISITE(S): Permission of instructor

MGMT 8506 - Sem/Indstry & Comp Anlys

(3) 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

(3) 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/Strtgy & Plan Rsrch

(3) 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

(3) 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

(1-6) 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

(3) 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

(3) Topics vary.

Marketing

MKTG 7060 - Marketing Management

(3) 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 **

(3) 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

(3) 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

(3) 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

(3) Special study of problems in marketing. Topics areas change each semester as determined by relevant developments in marketing.

MKTG 7251 - Ethics In Business

(1.5) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 **

(2) 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

(1-6) 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

(3-6) Grades of S, U, or IP will be given.

MKTG 8215 - Ethical Criticism

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Special study of problems in marketing. Topics areas change each semester as determined by relevant developments in marketing.

MKTG 8910 - Problems in Marketing

(1-6) 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

(3) 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

(3) (MKED 6610). (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

(3) 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

(3) (MKED 6641). (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

(1) Individual investigation and reports of research problems. PREREQUISITE(S): Permission of instructor.

MKED 7700 - Marketing Ed Stdy Tour

(1) (MKED 6700). (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

(1) 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

(1-3) Topics are varied.

MATH 6020 - Actuarial Mathematics

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(1-3) 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

(3) Linear transformations polynomials, determinants, direct-sum decompositions diagonalizable operators, rational and Jordan form, inner product spaces, the spectral theorem.

MATH 6261 - Abstract Algebra

(3) 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

(3) The real number system, functions and sequences, limits, continuity, differentiation; Riemann-Stieltjes integration, series of functions.

MATH 6351 - Intro Real Analysis II

(3) Integration theory; Riemann and Lebesgue integrals; partial differentiation; implicit function theorem.

MATH 6361 - Complex Variables

(3) Complex numbers, analytic functions, Cauchy-Riemann conditions, Taylor and Laurent series, integration.

MATH 6391 - Partial Diffrntl Equation I

(3) Laplace transforms; Fourier series; introduction to partial differential equations.

MATH 6392 - Partial Diffrntl Equation II

(3) Methods of characteristics; Greens functions; existence and regularity of solutions of boundary value and Cauchy problems. Grades of S, U, or IP will be given.

MATH 6396 - Perturbation Methods

(3) Asymptotic approximations, boundary layers, matched asymptotic expansions, multiple scales, geometric optics approximation (WKB), homogenization, application to differential equations.

MATH 6411 - Topology

(3) 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

(3) 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

(3) One semester introductory course in the use of R programming language for data processing, visualization, and analysis of data.

MATH 6611 - Intro Applied Statistics

(3) (6671) 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

(3) 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

(3) 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

(3) 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

(3) Introduction to statistical modeling and anlysis 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

(3) 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

(3) Hypothesis testing and confidence intervals for linear regression models, examination of residuals, calculation of elasticities and partial correlations, heteroscedasticity, serial correlation, multicolinearity, 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

(3) 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

(3) 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

(3) Derivation and application of computer-oriented, numerical methods for functional approximation, differentiation, quadrature, and solution of ordinary differential equations.

MATH 7016 - Fourier Analysis

(3) Facilitates understanding of some important facts abut 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

(3)

MATH 7171 - Wksp Middle Sch Math

(3) This course is designed to provide in-service training, with emphasis on new course content.

MATH 7174 - Workshop Sr Hi Math

(3) This course is designed to provide in-service training, with emphasis on transformation geometry.

MATH 7221 - Stat Gene Expression

(3) Design of microarray experiements; normalization procedures for Oligonucleotide and cDNA microarrays; clustering procedures: hierarchical clustering, principal compenents 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

(3) (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

(3) 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

(3) 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

(3) Studies in group theory and ring theory, including Sylow theory and factorization theory.

MATH 7262 - Algebraic Theory II

(3) A continuation of Math 7261. Studies in field theory and modules, including free algebras, Galois theory, tensor products.

MATH 7281 - Foundations of Linear Algebra

(3) (MATH 7793) 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

(3) 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

(3) 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. Fermatâ€™s little theorem, Eulerâ€™s Theorem and Wilsonâ€™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

(3) 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

(1-3) Repeatable by permission.

MATH 7321 - Modeling & Computation

(3) Introduction to process of formulating, solving, and interpreting mathematical models of real phenomena; both formal analysis and numerical techniques for variety of models.

MATH 7350 - Real Variables I

(3) s-algebra, outer measure, Lebesque measure, measurable functions, differentiation, absolute continuity, Lp-spaces.

MATH 7351 - Real Variables II

(3) 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

(3) 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. Grades of S, U, or IP will be given.

MATH 7355 - Functional Analysis I

(3) Vector spaces, Banach spaces, Hilbert spaces; linear functionals and operators in such spaces; spectral theory. PREREQUISITE(S): Permission of instructor.

MATH 7356 - Functional Analysis

(3) A continuation of MATH 7355-8355.

MATH 7361 - Complex Analysis

(3) 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

(3) 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

(3) (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

(3) (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

(3) 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

(3) 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

(4) 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

(4)
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

(4)
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

(3) 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

(3) 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): Permission of Instructor

MATH 7395 - Theory Diff Equatns

(3) 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): Permission of Instructor.

MATH 7411 - Point Set Topology

(3) (6671) An axiomatic approach to compactness, separability, connnectedness, metrizability and other topological properties. PREREQUISITE(S): Permission of instructor.

MATH 7501 - Nonlinear Wave Phenomena

(3) KdV-equation, regularized long wave BBM-equation, explicit solitary and cnoidal waves, orbital stability of solitary and cnoidal waves, Boussinesq equation, B oussinesq 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

(3) 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

(3) 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, vixcosity solutions, variational calculuc and elliptic problems.

MATH 7504 - Partial Differential Equations

(3) 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

(3) 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

(3) 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

(3) Covers SAS macro language and SAS SOL; topics include macro variables, macro processing, Marco expressions, Marco quoting; Proc SQL, retrieving data from tables, creating and updating tables and views; applications in statistics.

MATH 7608 - Statistical Programming with R

(3) 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

(3) Probability measures; distribution functions; independence; mathematical expectation, modes of convergence; Borel-Cantelli Lemma, weak and strong laws of large numbers; Glinvenko-Cantelli lemma; characteristic functions inversion theorems; Slustky'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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Basic concepts of hypothesis testing and confidence intervals; simple and multiple regression analyses, model selection, Mallow's Cp, examination of residuals, Box-Cox transformation, influence diagnostics, multicolinearity, 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

(3) 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

(3) Use of distribution-free statistics for estimation, hypothesis testing, and correlation measures in designing and analyzing experiments.

MATH 7651 - Linear Models

(3) 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

(3) 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

(3) 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

(3) Basic contents: multivariate normal distributions; Wishart distribution, Hotelling-T2, 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

(3) 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

(3) 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

(1-3) Directed individual study of recent developments in statistics. Repeatable by permission.

MATH 7672 - Spec Prob Statistics

(1-3) (6671). Recent developments in statistical methods and applications.

MATH 7680 - Bayesian Inference

(3) 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

(3) Probability spaces, theory of statistical inference, physical interpretations of probability. PREREQUISITE MATH 1920.

MATH 7685 - Simulation & Computing

(3) 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. PREREQUISITE(S): Two semesters (or equivalent)

of undergraduate improvisation, and permission of instructor.

MATH 7691 - Sem Statistical Resch

(1-3) Recent developments in statistical methods and their applications. Basic topics cover multivariate method

MATH 7692 - Statistical Consulting

(3) 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

(3) 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

(3) A continuation of Mathematics 6721; specialized methods and techniques in field of numerical analysis.

MATH 7759 - Categorical Analysis

(3) 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

(3) 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

(3) 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 Stochstic Mod Biom

(3) 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

(1-3) 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

(1-3) Repeatable by permission.

MATH 7922 - Spec Prob Applied Math

(1-3) Repeatable by permission. Grades of A-F, or IP will be given.

MATH 7960 - GA Teaching & Academic Strateg

(3) 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 â€" F or IP will be given. This course may not be repeated for credit.

MATH 7995 - Project Applied Math

(1-3) (7308) 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

(1-6) Grades of S, U, or IP will be given.

MATH 8020-8049 - Special Topics in Mathematics

(3)

MATH 8221 - Stat Gene Expression

(3) Design of microarray experiements; normalization procedures for Oligonucleotide and cDNA microarrays; clustering procedures: hierarchical clustering, principal compenents 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

(3) (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 8236 - Probabilistic Combinatorics

(3) 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

(3) 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

(1-3) Repeatable by permission.

MATH 8355 - Functional Analysis I

(3) Vector spaces, Banach spaces, Hilbert spaces; linear functionals and operators in such spaces; spectral theory.

MATH 8356 - Functional Analysis

(3) A continuation of MATH 7355-8355. May be repeated for a maximum of 3 credits when area of study varies

MATH 8393 - Differl Equatns/App

(3) 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.

MATH 8395 - Theory Diff Equatns

(3) 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.).

MATH 8501 - Nonlinear Wave Phenomena

(3) KdV-equation, regularized long wave BBM-equation, explicit solitary and cnoidal waves, orbital stability of solitary and cnoidal waves, Boussinesq equation, B oussinesq 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

(3) Generation of linear semigroups, perturbation and approximation, applications to partial differential equations, probability theory, quantum theory and Feynman integrals.

MATH 8503 - Semigroups Nonlinear Operators

(3) 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, vixcosity solutions, variational calculuc and elliptic problems.

MATH 8504 - Partial Differential Equations

(3) 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

(3) 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

(1-3)

MATH 8635 - Adv Stat Learning I

(3) 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

(3) 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

(3) 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

(3) 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

(3) Basic contents: multivariate normal distributions; Wishart distribution, Hotelling-T2, 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

(3) 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

(3) 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

(1-3) 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

(1-3) (6671). Recent developments in statistical methods and applications. Grades of A-F, or IP will be given.

MATH 8680 - Bayesian Inference

(3) 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

(3) 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

(1-3) Recent developments in statistical methods and their applications. Basic topics cover multivariate method

MATH 8692 - Statistical Consulting

(3) (Same as CIVL 7124-CIVL 8124) 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

(3) 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

(3) 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

(3) 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

(3) 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 Stochstic Mod Biom

(3) 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

(1-3) 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

(1-12) 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

(1-12) 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

(1-3) (Same asBIOM 7103-BIOM 8103) 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

(1-3) Repeatable by permission.

MATH 8922 - Spec Prob Applied Math

(1-3) Repeatable by permission. May be repeated when topic varies. PREREQUISITE(S): permission of instructor

MATH 9000 - Dissertation

(1-12) Independent research for the PhD degree. Grades of S, U, or IP will be given.

Mechanical Engineering

MECH 6305 - Fluid Mechanics II

(3) 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

(3) 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

(3) 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

(3) Principles of boiling, condensation, and radiation heat transfer; fundamentals of heat exchanger design.

MECH 6315 - Principles of HVAC Systems

(3) Psychometric analysis, heating and cooling loads of buildings and analysis of air conditioning systems.

MECH 6320 - Mechanics of Materials II

(3) 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 Methods in Design

(3) 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.

MECH 6325 - Adv Mech Materials

(3) Biaxial stresses, torsion, unsymmetrical bending of beams, shear centers, contact stresses, failure theory, and other selected topics.

MECH 6326 - Biomedical System Analys/Mech

(3) 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 6330 - Intro To Composite Mat

(3) Introduction to fiber reinforced composite materials. Includes mechanical behavior, strength, design methodology, and implementation of computer aided design.

MECH 6331 - Turbomachinery

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 6342 - Intro/Packaging Engineering

(3) Fundamental study of functions of packaging, packaging material, container type, processes, technology and equipment employed to protect goods during handling, shipping and storage.

MECH 6344 - Mechanical Controls

(3) 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

(3) 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

(3) 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 - Principles of Biomechanics

(4) (7308). Biomechanics of tissues and structures of the musculoskeletal system (bone, cartilage, tendons, ligaments, peripheral nerves, and muscle), biomechanics of all joints; applications of statics, mechanics of materials, and linear viscoelasticity.

MECH 6360 - Selection of Engr Materials

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) (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

(1-3)

MECH 7302 - Theory Continuous Media

(3) (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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 Analys I

(3) 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 Analys II

(3) 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

(3) (6803) 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

(3) (6804) 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

(3) 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

(3) Fundamental causes and mechanisms; corrosion control; study of specific corrosion problems.

MECH 7371 - Adv Mech Vibrations

(3) 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

(3) 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

(3) 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

(3) 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 7391 - Packaging Dyn/Distr Pack

(3) Introduction of package development process, packaging test and evaluation methods, stands, and equipments. Review of governmental regulations affecting packaging. Grades of S, U, or IP will be given.

MECH 7900 - Seminar

(1) 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

(1-3)

MECH 7979 - Contemp Issues In Mech

(1-3) 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

(1-3) 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

(1-3) 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

(1-6) 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

(1-3) 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

(1-6) Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

MECH 8302 - Theory Continuous Media

(3) (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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Modeling of linear and nonlinear vibrational systems; control, measurement, and stability of vibrational systems.

MECH 8378 - Intro Comptnl Fluid Dyn

(3) 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

(3) 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

(3) General principles and modeling of engineering systems using the finite element method; applications in fracture mechanics, hydrodynamics, and thermal conduction.

MECH 8391 - Packaging Dyn/Distr Pack

(3) Introduction to package development process, packaging test and evaluation methods, stands, and equipments. Review of governmental regulations affecting packaging.

MECH 8901-8909 - Special Topics in Mechanical Engineering

(1-3)

MECH 8979 - Contemp Issues in Mech

(1-3) 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.

MECH 8990 - Engineering Practicum

(1-3) 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

(1-3) 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

(1-3) 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

(1-12) 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

(1)

MUSE 6205 - Marching Band Technique

(2) 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

(3) 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

(2) A historical overview of the instrument and a practical overview of piano technology for the performer and teacher.

MUSE 6211 - Vocal Diction I

(2) Phonetic study of English and Italian languages in detail; introduction and basic rules of Latin pronounciation; 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

(2) 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 permisson of the instructor. Offered alternate years.

MUSE 6215 - Jazz Ensemble Technique

(1) 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

(3) 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

(1-3) May be repeated for credit when the topic varies.

MUSE 6505 - Collab Piano Technique

(2) 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

(3) 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

(3) Current literature, principles, methods, and psychology in brass playing and teaching. Offered even-numbered spring semesters.

MUSE 6520 - Percussion Pedagogy

(3) 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

(3) Practical methods for teaching performance skills to woodwind students; current literature, principles, and methods in teaching woodwind instruments.

MUSE 6802 - Level I Orff-Schulwerk

(3) 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

(3) 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

(3) 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

(1-3) 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

(3) Explores polymeters and functional harmony to include I-V, l-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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 - Orchtrtn Orff Instrm

(3) 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

(3) 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

(1-3) 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

(3) Individualized in-depth study of techniques and skills needed by professional collaborative pianists working with instrumentalists or singers.

MUSE 7219 - Concepts/Teach/Learn

(3) 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

(3) Active investigation and exploration of research methodologies specific to music education.

MUSE 7221 - Music Spec Populations **

(3) 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 **

(3) 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

(1-3) May be repeated when topic varies.

MUSE 7402 - Hist Phil Music Ed **

(3) 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

(3) 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 **

(3) Examination of aspects and types of assessment in the music classroom, with focus on assessment development and evaluation.

MUSE 7501 - Vocal Pedagogy 1

(3) 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

(3) Resources for teaching voice; hands-on mentored experience; preparation for less common problems.

MUSE 7503 - Intro Suzuki Piano

(3) 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

(3) 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 cord progressions; observation of lessons and classes taught by experienced teachers in the University Suzuki Piano Program.

MUSE 7511 - Projects Piano Pedagogy

(1-3) 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

(3) 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

(3) 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

(3) 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

(3) 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 od diction. Grades of S, U, or IP will be given.

MUSE 7520 - Jazz Pedagogy

(3) 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

(1-9) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 **

(3) 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 **

(3) 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

(3) 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

(3) 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

(1-3) 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 **

(1-3) 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

(1-3) Grades of S, U, or IP will be given. Grades of S, U, or IP will be given.

MUSE 7998 - Orff Practicum

(1-3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Individualized in-depth study of techniques and skills needed by professional collaborative pianists working with instrumentalists or singers.

MUSE 8219 - Concepts/Teach/Learn

(3) 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

(3) 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 **

(3) Recognition and comprehension of various disabilities and exceptionalities; techniques for teaching music to exceptional students.

MUSE 8222 - Rsrch Appl Music Education **

(3) 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

(1-3) May be repeated when topic varies.

MUSE 8402 - Hist Phil Music Ed

(3) 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

(3) 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 **

(3) 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

(3) 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

(3) Resources for teaching voice; hands-on mentored experience; preparation for less common problems.

MUSE 8506 - Ind Study Suzuki Teach

(3) Independent study of a selected topic in relation to Suzuki philosophy and method. PREREQUISITE(S): PHYS 3051.

MUSE 8516 - Adv Prob in Singing Diction

(3) 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 od diction. PREREQUISITE(S): PHYS 3010.

MUSE 8600 - Experiential Learning Credit

(1-9) 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

(3) 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

(3) 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

(3) 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

(3) 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

(1-3) 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

(1-9) 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.

Music History and Literature

MUHL 6002 - Song Repertory I

(2) 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

(2) 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 - Histry/Literature Organ

(3) Literature for the organ and its effect on and interaction with organ design.

MUHL 6008 - The Symphony

(3) 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

(3) Survey of choral repertories from Gregorian chant to 1700; contemporary performance practices; techniques of performing early choral music with modern mixed choirs.

MUHL 6010 - Choral Literature II

(3) Survey of choral repertories from 1700 to the present; contemporary performance practices; problems of modern performance. PREREQUISITE(S): PHYS 7200.

MUHL 6011 - String Quart Literature

(3) History of the string quartet; survey of its music from Haydn to the present; problems of performance.

MUHL 6013 - Women And Music

(3) 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 - Chamber Music/Piano

(3) 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. PREREQUISITE(S): PHYS 7375.

MUHL 6015 - Guitar Literature

(3) 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

(3) Survey of jazz vocal styles from the 1920's through the present, incorporating llistening, lecture, and analysis. Recorded works by important figures from each style and period will be studied.

MUHL 6018 - Oratorio Literature

(3) 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

(3) 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

(3) 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

(3) Survey of chamber music for strings, winds, and keyboards before 1700; course designed around needs of practicing instrumentalists.

MUHL 6030 - Percussion Repertory

(3) Survey of available literature for percussion instruments. Offered odd-numbered spring semesters.

MUHL 6260 - European Music Seminar

(1) Selected topics in theory or composition

MUHL 6260-6269 - Special Topics in Music History

(1-3)

MUHL 6304 - Music History Review

(3) Review of genres, repertories, 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

(3) 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

(3) 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

(3) Introduction to the study of ethnomusicology; taditional and popular musical styles and the role of music in societies throughout the world. Offered fall semester.

MUHL 6801 - Amercn Folk/Poplr Music

(3) 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

(3) 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

(3) Stylistic origins and development of rock and roll music from its beginning to the present.

MUHL 6806 - History Of Jazz

(3) Stylistic origins and development of jazz; interaction of jazz and Western classical music styles.

MUHL 6807 - Memphis Music

(3) 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

(3) 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

(1-3)

MUHL 7273 - Oratorio Literature

3 A survey or 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 - Biblio & Rsrch Methods

(3) Survey of the fields of historical and systematic investigation in music with bibliographical studies and research analysis.

MUHL 7401 - Medieval Music

(3) History of Western music from the earliest notations to c 1400.

MUHL 7402 - Renaissance Music

(3) History of Western music in the fifteenth and sixteenth centuries. PREREQUISITE(S): Permission of department

MUHL 7403 - Baroque Music

(3) History of Western music in the seventeenth and early eighteenth centuries.

MUHL 7404 - Classic Music

(3) 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 **

(3) 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

(3) History of Western music in the nineteenth century.

MUHL 7408 - Independent Study

(1-3) Individual research, under faculty supervision, on a selected topic in musicology. May be repeated when the topic varies.

MUHL 7409 - Rep For Collab Pianists

(3) Studies in selected areas of the collaborative piano repertory. May be repeated when topic varies:

MUHL 7505 - Seminar Musicology

(3) Seminars in selected areas of musicology. May be repeated when topic varies.

MUHL 7506 - Composer Studies

(3) 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

(3) 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

(3) 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

(3) Historical techniques and conceptions of performance from Gregorian chant through the seventeenth century.

MUHL 7552 - Performance Practice II

(3) Historical techniques and conceptions of performance since 1700. Students receive the equivalent of two half-hour lessons per week.

MUHL 7600 - Experiential Learning Credit

(1-9) 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

(3) 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

(3) Seminars in selected topics. May be repeated for credit when the topic varies.

MUHL 7804 - Intnshp Sthrn Reg Music

(3) 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

(1-3) 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

(1-3) Grades of S, U, or IP will be given.

MUHL 8260-8269 - Special Topics in Music History

(1-3)

MUHL 8400 - Biblio & Rsrch Methods

(3) Survey of the fields of historical and systematic investigation in music with bibliographical studies and research analysis.

MUHL 8401 - Medieval Music

(3) History of Western music from the earliest notations to c 1400.

MUHL 8402 - Renaissance Music

(3) 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

(3) History of Western music in the seventeenth and early eighteenth centuries.

MUHL 8404 - Classic Music

(3) History of Western music from c 1730 to c 1825.

MUHL 8405 - Music since 1900 **

(3) History of Western art music from 1900 to the present.

MUHL 8406 - Nineteenth Cent Music

(3) 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

(1-3) Individual research, under faculty supervision, on a selected topic in musicology. May be repeated when the topic varies.

MUHL 8409 - Rep For Collab Pianists

(3) Studies in selected areas of the collaborative piano repertory. May be repeated when topic varies:

MUHL 8505 - Seminar Musicology

(3) Seminars in selected areas of musicology. May be repeated when topic varies.

MUHL 8506 - Composer Studies

(3) 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

(3) 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 - Erly Musical Notation

(3) (RECR 6705-15) 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

(3) (RECR 6905-15) Historical techniques and conceptions of performance from Gregorian chant through the seventeenth century.

MUHL 8552 - Performance Practice II

(3) Historical techniques and conceptions of performance since 1700.

MUHL 8600 - Experiential Learning Credit

(1-9) A systematic process for evaluating and credentialing graduate-level learning gained in a variety of contexts. Credit determined by faculty assessor.

MUHL 8800 - Fld Mthd In Ethnmsclgy

(3) 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

(3) 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

(3) Seminars in selected topics. May be repeated for credit when the topic varies. PREREQUISITE(S): Permission of instructor

MUHL 8804 - Intnshp Sthrn Reg Music

(3) (RECR 6705-15) 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 - Trnscrpt/Anly Etnmsclgy

(3) (RECR 6905-15) 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 Reg Music

(3) 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

(1-9) Grades of S, U, or IP will be given.

Music Industry

MUID 6260-6269 - Special Topics in Commercial Music

(1-3)

MUID 6603 - Copyright/Music Publish

(3) 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

(3) 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

(3) 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

(1-3) 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

(3) Grades of A-F, or IP will be given.

MUID 7800 - Tech Applic In Music

(3) 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

(1-3) 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

(3) Advanced instruction in current technology assisting the composer, teacher, and practical musician.

Music Theory and Composition

MUTC 6202 - Music Theory Review

(3) 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

(1-3)

MUTC 6501 - Composition

(3) (7016) 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 7010 - Adv Improv Pract/Mat

(3) (7050) 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

(3) 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

(3) 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 - Theory I

(3) Analysis of style features of the music of the eleventh century through the Baroque period.

MUTC 7202 - Theory II

(3) Analysis of style features of the music of the late 18th and 19th centuries.

MUTC 7203 - Independent Study

(1-3) (7013) Individual research, under faculty supervision, on a selected topic in music theory. May be repeated when topic varies.

MUTC 7204 - History of Music Theory

(3) Overview of historical approaches to music theory and analysis with a focus on theories of tonality during the common-practice period.

MUTC 7205 - Theory III

(3) Analysis of style features of music since 1900.

MUTC 7207 - Theories of Musical Meaning

(3) Study of the meaning and expression in western musical traditions, through the lenses of linguistics, semiotics and the cognitive sciences.

MUTC 7260-7289 - Special Topics in Theory and Composition

(1-3)

MUTC 7501 - Composition

(2-6) 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

(3) 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

(3) Topics will vary by semester. May be repeated for credit

MUTC 7599 - Composition Practicum

(3-6) Grades of S, U, or IP will be given. May be repeated for up to 12 hours

MUTC 7600 - Experiential Learning Credit

(1-9) 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

(3) (MUTC 7330). 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

(3) (MUTC 7331) 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

(1-3) Grades of S, U, or IP will be given.

MUTC 8101 - Pedagogy Of Theory

(3) 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 - Theory I

(3) (7334) Analysis of style features of the music of the eleventh century through the Baroque period.

MUTC 8202 - Theory II

(3) Analysis of style features of the music of the late 18th and 19th centuries.

MUTC 8203 - Independent Study

(1-3) 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

(3) Overview of historical approaches to music theory and analysis with a focus on theories of tonality during the common-practice period.

MUTC 8205 - Theory III

(3) Analysis of style features of music since 1900. PREREQUISITE(S): Permission of instructor.

MUTC 8207 - Theories of Musical Meaning

(3) Study of the meaning and expression in western musical traditions, through the lenses of linguistics, semiotics and the cognitive sciences.

MUTC 8260-8289 - Special Topics in Theory and Composition

(1-3)

MUTC 8501 - Composition

(2-6) 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

(3) 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

(3) Topics will vary by semester. May be repeated for credit.

MUTC 8599 - Composition Practicum

(3-6) Grades of S, U, or IP will be given. May be repeated for a maximum of 9 credit hours

MUTC 8600 - Experiential Learning Credit

(1-9) 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

(3) 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

(3) 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

(1-9) Grades of S, U, or IP will be given. May be repeated for up to 12 hours

Nursing

NURS 6110 - Rsrch/Evd Based Prctice

(3) 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 - Contempry Issues/Trends

(3) 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

(3) Overview of community based health care delivery system at local, state, and national levels; theories and principles of nursing care of communities and aggregrates 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

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(1) 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 **

(3) 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 **

(3) 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 7110 - Independent Study **

(1-3) 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 **

(3) 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 **

(3) 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 - Clinical Focus Practicum **

(2) Use of theory, clinical concepts, and nursing research in delivery of care to specific patient populations from a social, cultural, psychological, physical, spiritual, and economic perspective for the advanced practice nurse. Students must achieve a grade of B" or better to progress. PREREQUISITE(S): Completion of all non-practicum MSN education courses.

NURS 7209 - Nursing Education Practicum **

(4) Integrates theory in a reality context; provides opportunities to participate in all phases of teaching and to experiment with different teaching methods. Students must achieve a grade of B" or better to progress. PREREQUISITE(S): Completion of all non-practicum MSN education courses.

NURS 7301 - Nursing Admin I **

(3) 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

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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

(2) 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 **

(4) 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

(3) 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

(2)

NURS 7401 - Intro Healthcare Informatics

(3) 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

(3) 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

(3) 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 **

(3) 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

(2) 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

(3)

NURS 7407 - Informatics Applications I

(2) 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

(2) 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

(4) PREREQUISITE(S): NURS 7003

NURS 7505 - Advanced Adult Health Nursing **

(3) Pre- or Co-Requisites: NURS 7101, 7102, 7103, 7104

NURS 7515 - Adv Psych/Mentl Health Nursing

(3) Pre-Requisites: NURS 7101, 7102, 7103, 7104

NURS 7525 - Ecg/Crit Care Nurses **

(3)

NURS 7545 - Adv Womens Hlth/Perinatal Nurs **

(3) Pre- or Co-Requisites: NURS 7101, 7102, 7103, 7104 PREREQUISITE(S): r.

NURS 7601 - Family Nurse Practnr I **

(3) 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 **

(2) 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 **

(3) 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 **

(4) 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 **

(3) 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 Cln **

(2) 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 **

(4) 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

(3) 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 **

(3) 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 7810-7820 - Special Topics in Nursing

(3) Topics are varied. PREREQUISITE(S): Permission of instructor.

NURS 7901 - Comm/Rel Bldg Nurse Exec **

(3) 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

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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

(3)

NURS 7907 - Evidenc-Based Ldrshp Pract **

(3) 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 **

(3) 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 **

(4) 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 **

(3) 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

(1-3) Directed study in the completion of the thesis.

NURS 8111 - Philosophy of Science **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(1) 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 **

(2) This course involves the active participation of the student in a mentored pilot research project. The practicum involves guiding the student to design and implement a pilot research project, conducting data analysis, and prepare study dissemination through manuscript submission.

NURS 9000 - Doctoral Dissertation

(1-9) 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

3 NUTR 7522 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

(3) (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

(3) (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

(3) (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

(1-3) (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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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

(3) 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

(3) ESMS 7152/HPRO 7152/PETE 7152 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 **

(3) Study of the relationships between food, nutrition, and the environment with emphasis on sustainability. PREREQUISITE(S): Permission of instructor

NUTR 7183 - Complementary NUTR **

(3) Study of complementary nutrition practices with emphasis on evaluating effectiveness.

NUTR 7205 - Nutrition Care Acute/Chronic I

(3) (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

(3) 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

(3) (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/ChronicII

(3) 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

(1)

NUTR 7405 - Pharmacol Nutr Prof

(3) 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

(3) (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 7415 - Prof Issues Nutr

(2) Survey of professional issues for clinical dietitians. Topics covered will include ethics, reimbursement, communicating nutrition information to the public, professional development and participation, entrepreneurship, marketing, and developing business plans.

NUTR 7422 - Cellular Nutrition II

(3) (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

(3) 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

(3) 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

(6) (CSED 7481) 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 7482 - Clinical Residency NUTR

(1) Individualized clinical experience (120 hours) designed at an advanced level to enhance self-direction in learning and to develop advanced competence in area of individual interest. May be repeated for a maximum of 6 credit hours. PREREQUISITE(S): PSYC 7301, PSYC 7302, PSYC 7303, and permission of instructor.

NUTR 7710 - Humanitarian Nutrition **

(3) Study of local and global food/nutrition availability and accessibility. Food justice and environmental stewardship.

NUTR 7712 - Cultural Nutrition and Foods **

(3) Overview of traditional food practices locally and globally to develop understanding of food values.

NUTR 7720 - Food Policy **

(3) 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 **

(3) 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 **

(3-6) 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 **

(3) In depth review and presentation of topic focused on a current issue in environmental nutrition. PREREQUISITE(S): Permission of instructor.

NUTR 7950 - Applied Project in NUTR **

(1-6) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) ESMS 7152/HPRO 7152/PETE 7152. 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

(3) (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

(3) (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

(3) Study of the vertebrate digestive system and the relations with diet, development, and health and disease.

NUTR 8454 - Molecular Nutrition

(3) Study of the cellular and molecular responses of the body to nutrients and the relations with health.

Philosophy

PHIL 6211 - Ancient Philosophy

(3) 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

(3) 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 Psychology graduate student or permission of instructor. PREREQUISITE(S): Permission of instructor.

PHIL 6421 - Philosophy Of Mind

(3) 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 - Rec Anglo American Phil

(3) An examination of major developments in philosophy in England and the United States from 1900 to present with reading from such philosophers as Russell, Moore, Ayer, Wittgenstein, James, Dewey, Lewis, Quine, and other contemporary authors. PREREQUISITE(S): Permission of Instructor.

PHIL 6441 - Recent Continentl Phil

(3) Major figures in 20th century European thought; movements such as phenomenology, existentialism, structuralism, critical theory, and hermeneutics. PREREQUISITE(S): Permission of Instructor.

PHIL 6551 - Social & Political Phil

(3) 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

(3) The nature of axiomatic systems and foundations of mathematics. PREREQUISITE(S): Permission of instructor.

PHIL 6661 - Philosophy Of Science

(3) 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

(3) 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

(3) 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

(1-3) 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

(1-3) 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

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 7030 - Sem Continentl Phil

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 7040 - Sem Normative Phil

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 7201 - Sem Classical Phil

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 7203 - Sem Contemporary Phil

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 7301 - Sem Modern Phil

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 7414 - Seminar In Metaphysics

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 7421 - Seminar In Epistemology

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 7442 - Seminar On Heidegger

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 7514 - Cognitive Science Seminar

(3) AUSP 7514, PSYC 7514, COMP 7514 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

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 7551 - Seminar Ethical Theory

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 7800-7810 - Special Topics in Philosophy

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 7994 - Reading And Research

(1-6) 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

(1-9) 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

(1-3) 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

(1-3) 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

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 8030 - Sem Continentl Phil

(3) 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

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 8051 - Collo Phil Problems

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 8201 - Sem Classical Phil

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 8203 - Sem Contemporary Phil

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 8252 - Sem On Aristotle

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 8301 - Sem Modern Phil

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 8414 - Seminar In Metaphysics

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 8421 - Sem In Epistemology

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 8442 - Seminar On Heidegger

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 8514 - Cognitive Science Seminar

(3) AUSP 8514, PSYC 8514, COMP 8514 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

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 8551 - Seminar Ethical Theory

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 8800-8810 - Special Topics in Philosophy

(3) Information will be in *Schedule of Classes*. PREREQUISITE(S): Permission of Instructor.

PHIL 8994 - Adv Reading & Research

(1-6) 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

(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

(3) 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

(3) Study of different curricular models and how to set up yearly and unit plans.

PETE 7003 - Tchng Indv/Team Sports

(3) 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

(3) Provides students with a range of tools to assess school children in psychomotor, cognitive, affective, and fitness areas.

PETE 7005 - Educational Gym&Dance

(3) 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 **

(3) Provides students with a range of instructional models that can be used in teaching physical education.

PETE 7007 - Advanced Clinical Pract

(3-9) 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

(1-3) Includes a range of professional issues and the development of a professional portfolio. COREQUISITE: PETE 7007.

PETE 7133 - Current Readings PETE

(3) Directed readings in area of physical education teacher education; materials selected to strengthen areas of study.

PETE 7142 - Seminar in PETE

(1-3) May be repeated when topic changes for a maximum of 3 credits. Restricted by Program or by Permit.

PETE 7152 - Problems in PETE

(1-3) ESMS 7152/HPRO 7152/NUTR 7152 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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

(3) Current topics in physical education teacher eduation.

PETE 7950 - Applied Project in PETE

(1-6) 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

(3) Selected topics of current interest in physics. Topics are varied and announced in online class listings

PHYS 6020 - Soft Matter and Biological Physics

(3) 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

(3) Applied radiation and radioactivity; types of radiation, radiation management, interaction with matter, and biological effects; radiation safety aspects emphasized.

PHYS 6040 - Medical Physics

(3) Physics of sensory, respiratory, and circulatory systems; physical basis of radiology and nuclear medicine. Restricted by Program or by Permit.

PHYS 6050 - Astrophysics I

(3) Principles of physics applied to the objects of the universe, e.g., planets, sun, stars, etc. Also includes and 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

(3) 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 6110 - Nuclear and Particle Physics

(3) 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

(3) 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

(3) 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

(3) Continuation of PHYS 3211. PREREQUISITE(S): PHYS 3211.

PHYS 6222 - Environmental Physics

(3) 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

(4) 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

3 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3-6) Selected topics in advanced physics. Topics are varied and announced in online class listings.

PHYS 7060 - Individual Study in Advanced Physics

(1-3) 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 7080 - Teaching Skills for Graduate Assistants

(3) 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. PREREQUISITE(S): PADM 7600 and PADM 7605, or permission of graduate coordinator.

PHYS 7090 - Professional Development Workshop

(3) Presentations by Physics faculty and students on current research topic; oral presentation required based on research performed under the supervision of a faculty member. NOTE: Physics majors may not use this course to fulfill degree requirements.

PHYS 7100 - Classical Mechanics

(3) 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

(3) 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

(3) 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

(3) 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

(3) (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

(3) (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

(3) 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

(3) Complex analysis, Fourier series, Fourier and Laplace transforms, ordinary differential equations, partial differential equations, special functions.

PHYS 7390 - Polymer Physics

(3) 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. PREREQUISITE(S): PADM 7601 or equivalent or permission of instructor.

PHYS 7520 - Statistical Mechanics

(3) 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

(3) 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

(1-3) 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

(1-6) 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 8100 - Classical Mechanics

(3) 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

(3) 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

(3) Continuation of PHYS 7200; scattering theory, quantum dynamics, spin, and perturbation methods. May be repeated for a maximum of 12 credits

PHYS 8300 - Electrodynamics

(3) Electrostatics, multipole expansion, magnetostatics, electrodynamics, electromagnetics waves.

PHYS 8385 - Methods in Computational Physics

(3) 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

(3) Complex analysis, Fourier series, Fourier and Laplace transforms, ordinary differential equations, partial differential equations, special functions.

PHYS 8520 - Statistical Mechanics

(3) 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 9000 - Dissertation

(1-18) 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

(3) (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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Selected issues in contemporary urban politics and policy. PREREQUISITE(S): PADM 7641 or permission of instructor.

POLS 6230 - Legislative Interns

(3-12) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Theoretical approaches to study of international politics. Consideration of various schools of thought, methods, and substantive literatures.

POLS 6510 - Politics Global Econ

(3) Consideration of manner in which political processes affect and are affected by economic processes at global level.

POLS 6511 - International Conflict

(3) Sources of conflict between nations, including characteristics of the international system, national attributes, and decision making.

POLS 6512 - Global Environmental Politics

(3) 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

(1-3) May be repeated for a maximum of 9 credits

POLS 7100 - Sem Scope/Meth Pol Sci

(3) Survey of major theoretical approaches to study of politics with emphasis on both analytic and empirical aspects of political inquiry.

POLS 7101 - Political Statistics

(3) 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

(3) Selected topics in American government and politics. May be repeated for a maximum of 6 credit hours.

POLS 7202 - Seminar US Government

(2-3) Analysis of the principle instiUitions of United States government, mcluding at the local, state. and federal levels.

POLS 7203 - Seminar in Public Policymaking

(3) 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

(3) 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

(3) 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

(3) (Same as COMP 7780-COMP 8780) Selected topics in comparative politics. May be repeated for a maximum of 6 credit hours.

POLS 7303 - Sem Political Devlpmnt

(3) 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

(3) 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

(3) 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

(3) Contribution of political philosophy to full understanding of politics is illustrated through selected topics.

POLS 7402 - Topics in Political Thought

(3) Selected topics within political theory. May be repeated a maximum of 6 hours.

POLS 7501 - Sem Interntl Relations

(3) Selected topics in international politics and foreign policy. May be repeated for a maximum of 6 credit hours.

POLS 7502 - Sem Intnl Confl/Security

(3) (same as PUBH 7305-PUBH 8305) 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

(2-3) 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

(2-3) 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

(3) Analysis of the conduct and formulation of foreign policy.

POLS 7508 - Interntnl Reltns Theory

(3) A survey of the main theoretical approaches within the field of international relations.

POLS 7510 - Politics Global Economy

(3) Analysis of the interactive relationship between global political and economic processes.

POLS 7512 - Politics of Environment Change

(3) 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

(1-3) 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

(1-3) May be repeated for a maximum of 3 credits

POLS 7996 - Thesis

(1-6) 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

(3) Selected topics in American government and politics. May be repeated for a maximum of 6 credit hours.

POLS 8302 - Sem Comp Politics

(3) Selected topics in comparative politics. May be repeated for a maximum of 6 credit hours.

POLS 8501 - Sem Interntl Relations

(3) 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

(1-3) 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

(1-3) May be repeated for a maximum of 3 credits

Portuguese

PORT 6024 - Brazilian Short Story

(3) Accelerated introduction to Portuese 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 **

(3) 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 Envron/Issue/Ethic **

(3) 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 **

(3) 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/Profsns **

(3) 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 **

(3) The study and application of research methods appropriate to professional studies.

PRST 7310 - Leadership/Organization **

(3) 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 **

(3) 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 **

(3) Evaluation of Learning, covers the concepts and skills used in evaluation models, theories, and best practices.

PRST 7420 - Org Needs Assessment **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 sesstions and receive feedback.

PRST 7500 - Foundation/Leadership **

(3) 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 **

(3) 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 **

(3) Negotiation and Conflict Management presents negotiation theory â€" strategies and styles â€" within an employment context. May be repeated for maximum of 20 credits with change in topic

PRST 7770 - Comp Based Decsn Model **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 philosphy interact.

PRST 7930 - Compensation and Benefits **

(3) 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,Retentio **

(3) 3

PRST 7998 - Professional Project **

(3) Supervised research that serves as the integrative culmination for the Master of Professional Studies student.

Psychology

PSYC 6513 - Psychology of Grief/Loss

(3) Impact of bereavement from both natural and violent deaths, as well as the loss of children, parents, partners and significant others.

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PSYC 7000 - History/System Psyc

(3) Seminar of basic issues in contemporary psychology within their historical context with extensive examination of their implications for theoretical and professional applications.

PSYC 7010-29-8010-29 - Special Topics in Psychology

(1-3) Topics are varied and announced in online class listings.

PSYC 7110 - Ethics And Psychology

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 - Personnel Psychology

(3) An in-depth study of the theories and procedures used by personnel psychologists to conduct job analyses and apply the findings to the development of valid and reliable selection/promotion strategies and performance measurement instruments. The course includes a significant amount of hands-on experience so students acquire the knowledge and skills to competently carry out these activities in applied settings.

PSYC 7214 - Industrial Training

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) (Same as COMP 7780 -COMP 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 7222 - Psychology Human Memory

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) (same as PUBH 7305-PUBH 8305) (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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) (PSYC 7503) Restricted to Program or by Permit.

PSYC 7315 - Randomized Clinical Trials

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 Psyc

(3) 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

(3) 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

(3) 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

(3) 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

(1-3) 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

(1-3) 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 Wrtng

(3) 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

(3) 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

(3) 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

(3)

PSYC 7507 - Sem Industrial Psyc

(3)

PSYC 7509 - Sem School Psychology

(3)

PSYC 7510 - Sem Organztnl Psych

(3)

PSYC 7512 - Sem Develpmtal Psyc

(3)

PSYC 7514 - Sem Cognitive Science

(3) (same as COMP 7514, PHIL 7514, AUSP 7514). 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

(3)

PSYC 7516 - Issues Psychothrpy Rsch

(3) Research evidence pertaining to basic questions about psychotherapy and its effectiveness; classic contributions and current research findings.

PSYC 7517 - Grant Prop Writing/Psyc

(3) 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

(3) 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

(3) (PSYCH 7501) Restricted by Program or by Permit.

PSYC 7601 - Res Prac Gen Psych

(1-3) Grades of S, U, or IP will be given.

PSYC 7602 - Res Prac Phys Psych

(1-3) Grades of S, U, or IP will be given.

PSYC 7603 - Res Prac Exp Psych

(1-3) Grades of S, U, or IP will be given.

PSYC 7604 - Res Prac Comp Psych

(1-3) Grades of S, U, or IP will be given.

PSYC 7605 - Res Prac Social Psyc

(1-3) Grades of S, U, or IP will be given.

PSYC 7606 - Res Prac Clinical Psyc

(1-3) Grades of S, U, or IP will be given.

PSYC 7607 - Res Prac Devlpmntl Psyc

(1-3) Grades of S, U, or IP will be given.

PSYC 7608 - Res Prac Neuropsyc

(1-3) Grades of S, U, or IP will be given.

PSYC 7609 - Res Prac School Psych

(1-3) Grades of A-F, or IP will be given.

PSYC 7610 - Field Prac Clin Psyc

(1-6) 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

(1-3) 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 Psyc

(3) 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

(1-3) 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 Neuropsyc

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

(1-3) 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

(1-3) Restricted by Program or by Permit.

PSYC 7619 - Child/Family Practicum

(1-3) 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

(3) 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

(1-3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3-6) 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

(3) 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

(1-3) 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)

(1-3) 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

(3) Seminar of basic issues in contemporary psychology within their historical context with extensive examination of their implications for theoretical and professional applications.

PSYC 8110 - Ethics And Psychology

(3) 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

(3) 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

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(3) 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

(3) 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

(3) 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 - Personnel Psychology

(3) An in-depth study of the theories and procedures used by personnel psychologists to conduct job analyses and apply the findings to the development of valid and reliable selection/promotion strategies and performance measurement instruments. The course includes a significant amount of hands-on experience so students acquire the knowledge and skills to competently carry out these activities in applied settings. PREREQUISITE(S): PSYC 7212/PSYC 8212.

PSYC 8214 - Industrial Training

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) (Same as COMP 7780-COMP 8780) (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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) (Same as PUBH 7305-PUBH 8305) (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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) (PSYC 8503) Restricted to Program or by Permit.

PSYC 8315 - Randomized Clinical Trials

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(1-3) 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

(1-3) 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 Wrtng

(3) 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

(3) 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

(3) 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

(3)

PSYC 8507 - Sem Industrial Psyc

(3)

PSYC 8509 - Sem School Psychology

(3)

PSYC 8510 - Sem Organztnl Psych

(3)

PSYC 8512 - Sem Develpmtal Psyc

(3)

PSYC 8514 - Sem Cognitive Science

(3) (same as COMP 8514, PHIL 8514, AUSP 8514). 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

(3)

PSYC 8516 - Issues Psychothrpy Rsch

(3) Research evidence pertaining to basic questions about psychotherapy and its effectiveness; classic contributions and current research findings.

PSYC 8517 - Grant Prop Writing/Psyc

(3) 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

(3) 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

(3) (PSYC 8501) Restricted by Program or by Permit.

PSYC 8601 - Res Prac Gen Psych

(1-3) Grades of S, U, or IP will be given.

PSYC 8602 - Res Pract Phys Psyc

(1-3) Grades of S, U, or IP will be given.

PSYC 8603 - Res Prac Exp Psyc

(1-3) Grades of S, U, or IP will be given.

PSYC 8604 - Res Prac Comp Psych

(1-3) Grades of S, U, or IP will be given.

PSYC 8605 - Res Prac Social Psych

(1-3) Grades of S, U, or IP will be given.

PSYC 8606 - Res Prac Clinical Psyc

(1-3) Grades of S, U, or IP will be given.

PSYC 8607 - Res Prac Devlpmntl Psyc

(1-3) Grades of S, U, or IP will be given.

PSYC 8608 - Res Prac Neuropsych

(1-3) Grades of S, U, or IP will be given.

PSYC 8609 - Res Prac School Psych

(1-3) Grades of A-F, or IP will be given.

PSYC 8610 - Field Prac Clin Psyc

(1-6) 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

(1-3) 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 Psyc

(3) 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

(1-3) 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 Neuropsyc

(3) 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

(1-3) May be repeated for a maximum of 3 credits. Grades of S, U, or IP will be given.

PSYC 8619 - Child/Family Practicum

(1-3) 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

(3-6) 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

(3) 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

(1-3) 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

(3) 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

(3) 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

(1) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3-6) 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

(3) 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

(0) 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

(1-9) 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

(3) (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

(3) 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 **

(3) 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

(3) 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

(3) 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

(3) 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

(3) (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

(1-3)

PADM 7213 - Sem Publ Pol Analysis

(3) 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 **

(3) 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

(3) (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 **

(3) 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

(3) 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 **

(3) Detailed study of administrative, technical and political arenas of of financial policy, the budgetary process, and fiscal controls for public and nonprofit organizations.

PADM 7603 - Pblc/Nonprofit Contr **

(3) 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

(3) (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 **

(3) 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

(3) 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

(3) 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

(3) (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

(3) 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

(3-6) 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

(3-6) 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

(3) 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

(3) 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

(3) 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 **

(3) 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 **

(3) (same as PSYC 7305-PSYC 8305) 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 **

(3) (PSYC 7306-8306) 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

3 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 7661 - Contemp Persp PA

(3) 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

(3) (PSYC 7308-8308) 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 Polcy **

(3) 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

(1-3) Same as PSYC 7310-PSYC 8310. 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

(1-3)

PADM 7720 - Social Entrepreneurship **

(3) 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

(3) 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

(1-6) 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

(3) 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 **

(3) 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 **

(3) (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

(3) 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

(3) Detailed study of administrative and political problems of fiscal policy, the budgetary process, and fiscal controls.

PADM 8603 - Pblc/Nonprofit Contr

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) (Same as COMM 7345-COMM 8345) 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

(3) 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

(3) 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

(3) 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

(3) 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 **

(3) 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 **

(3) 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

(3) 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

(3) 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 Polcy

(3) 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

(1-3) 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

(1-3)

Public Health

PUBH 7001 - Health Care Policy

(3)

PUBH 7002 - Comm Hlth Assessmt & Prog Plan **

(3) 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

(3) 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 - Data Mining Hlthcare Analytics

(3) Data Mining for Healthcare Analytics 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 7014 - Public Health Communication

(3) (same as COMM 7014-8014) 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

(3) 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 adjusstment will be applied using public data sets.

PUBH 7120 - Environmental Health I **

(3) 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

(3) 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 **

(3) 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

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) (cross-listed with ECON 7710-ECON 8710) 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

(3) 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 **

(3) 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

(3) 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 Chronic Disease

(3) (COMM 7014-8014) 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 **

(3) 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 **

(3) 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 **

(3) 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

(3) 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

(3) 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 **

(3) 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 reviewd in depth and illustrated with examples of the application of these models to helath promotion and disease prevention with individuals, groups and communities. PREREQUISITE(S): Permission of instructor.

PUBH 7161 - Health Behavior Theories

(3) 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

(3) 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 **

(3) 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 **

(3) 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

(3) 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

(3) 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 **

(3) 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

(3) This class introduces students to advanced SAS programming statements and techniques using the SAS system software.

PUBH 7191 - Adv SAS for PUBH Prof II

(3) 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

(3) 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 Anlys/Sim for UrbnHlth **

(3) 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

(3) (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 â€œmeta-analysisâ€) 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, masterâ€™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

(3) (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

(3) 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

(3) (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

(3) 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

(3) Instruction in the use of mixed-model regression with a focus on design and ananlysis 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

(3) 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 pusuing a career in research. Same as PSYC 7311-8311.

PUBH 7333 - Addictive Behaviors

(3) 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

(3) 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 **

(3) 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 disearse; 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

(3) 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

(3) 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 **

(3) 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

(3) (same as PSYC 7305-PSYC 8305) 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 Develp **

(3) (PSYC 7306-8306) 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

(3) 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

(3) (PSYC 7308-8308) This course provides an evidence-based approach to the study of the epidemiology and heatlh 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

(3) 3

PUBH 7345 - Health Literacy

(3) (Same as PSYC 7310-PSYC 8310, COMM 7345-COMM 8345). 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

(3) (Same as PSYC 7311-PSYC 8311) 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 heatlh policy issues in the United States.

PUBH 7347 - Qualitative Mtds Hlth Research

(3) 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

(3) 3

PUBH 7400 - Special Problems

(3) 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

(3) 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

(3) 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 Epidemiolgy **

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

3 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

3 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 heath 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 7501 - Health Systems Organizations

(3) 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

(3) 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, psychsocial, epidemiological and economic perspectives to give students a framework for understanding tobacco addiction and its prevention and treatment.

PUBH 7503 - Health Systems Decision-Making

(3) (Same as COMM 7345-COMM 8345) 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

(3) 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

(3) 3

PUBH 7601 - PUBH Preparedness & Response

(3) 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 **

(3) 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

(3) 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

(3) This interdisciplinary course focuses on ibcreasing 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 inpact human health. Key topics include neighborhoos, physical activity, and diet; active transportation; disparity by race/ethnicity and income levels; social determinants; and policy interventions.

PUBH 7623 - Spatial Health Inequalities

(3) (same as ESCI 7623 - ESCI 8623). 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

(3) (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

(3) 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 **

(3)

PUBH 7992 - Master's Project Seminar **

(3) 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

(1-6) Grades of S, U, or IP will be given.

PUBH 8006 - Data Mining Hlthcare Analytics

(3) Data Mining for Healthcare Analytics 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

(3) (same as COMM 7014-COMM 8014). 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

(3) 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 adjusstment will be applied using public data sets.

PUBH 8120 - Environmental Health I

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) (cross-listed with ECON 7710-ECON 8710) 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

(3) 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

(3) 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

(3) 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

(3) 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 Chronic Disease

(3) 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 8141 - Epidemiologic Survey Method

(3) 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

(3) 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

(3) 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

(3) 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

(1) 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

(1) 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

(3) 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 reviewd in depth and illustrated with examples of the application of these models to helath promotion and disease prevention with individuals, groups and communities.

PUBH 8161 - Health Behavior Theories

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 7000/8000 level; Lecture/Lab Hours: 3 contact hours (2-5 pm)/week

PUBH 8180 - Foundations of Public Health

(3) 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 appraches to promote health; public health concerns in urban communities; and current public health practice.

PUBH 8190 - Adv SAS for PUBH Prof 1

(3) 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

(3) 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

(3) 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 Anlys/Sim for UrbnHlth

(3) 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

(3) (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 â€œmeta-analysisâ€) 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, masterâ€™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

(3) (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

(3) 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

(3) (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

(3) 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

(3) Instruction in the use of mixed-model regression with a focus on design and ananlysis 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 **

(3) 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 pusuing a career in research. Same as PSYC 7311-8311.

PUBH 8333 - Addictive Behaviors

(3) 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

(3) 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

(3) 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 disearse; 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

(3) 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

(3) 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).3

PUBH 8338 - Critical Issues in Global Hlth

(3) 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

(3) 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 Develp

(3) 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

(3) 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

(3) This course provides an evidence-based approach to the study of the epidemiology and heatlh 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

(3) 3

PUBH 8345 - Health Literacy

(3) (Same as PUBH 7345-PUBH 8345, COMM 7345-COMM 8345) 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

(3) 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 heatlh policy issues in the United States.

PUBH 8347 - Qualitative Mtds Hlth Research

(3) 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

(3) 3

PUBH 8400 - Special Problems

(3) 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

(3) 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 Epidemiolgy

(3) 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

(3) 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

(3) 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

(3) 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

3 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

3 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

3 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 heath 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) This interdisciplinary course focuses on ibcreasing 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 inpact human health. Key topics include neighborhoos, physical activity, and diet; active transportation; disparity by race/ethnicity and income levels; social determinants; and policy interventions.

PUBH 8623 - Spatial Health Inequalities

(3) (same as ESCI 7623 - ESCI 8623). 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

(3) (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 **

(3) 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 Healh (NIH) funding mechanisms; however, the topics covered will also be applicable to other federal and foundation funding sources.

PUBH 8800 - Guided Research in PUBH

(1-6) Students will conduct public health-related research under the mentorship of a faculty member.

PUBH 8900 - Adv Concepts in PUBH I

(3) 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 â€œbig pictureâ€ 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 generallyâ€"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 lifeâ€™s workâ€"reflecting on several individualâ€™s personal perspectives. PREREQUISITE(S): ECON 6810 or equivalent.

PUBH 8901 - Doctoral Professional Dev Sem

(3) 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 otherâ€™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

(1-9) 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

(3)

Reading

LITL 7000 - Literacy/English Lang Learners **

(3) Research based literacy teaching and assessment strategies/methods for the English language learner, including theories.

LITL 7304 - Writing Theory and Practice **

(3) 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 **

(3) 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 **

(3) (RDNG 7541) 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 Proced Reading Prob

(3) 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

(3) 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

(3) 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 **

(2) 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

(3) 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

(3) 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

(3) 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

(2) 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

(3) 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 **

(3) 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

(3) 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 **

(3) Develops knowledge, skills and dispositions necessary for successful literacy coaching.

LITL 7561 - Literacy Coach Practicum

(3) Application of knowledge about literacy coaching in a practical classroom setting.

LITL 7809 - Literacy Research Practicum **

(3) 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 **

(3) Research based literacy teaching and assessment strategies/methods for the English language learner, including theories.

LITL 8155 - Hist Literacy Instruction

(3) 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 **

(3) 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

(3) 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 **

(3) 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 Proced Reading Prob

(3) 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 Lrnr

(3) 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

(3) 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

(3) 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

(3-6) 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

(3-6) 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

(3) 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

(3) 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

(1-3) 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

(1-6) 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 **

(3) Develops knowledge, skills and dispositions necessary for successful literacy coaching.

LITL 8561 - Literacy Coach Practicum

(3) Application of knowledge about literacy coaching in a practical classroom setting.

LITL 8580 - Comp:Theory/Practice

(3) 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

(3) 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

(3) 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 **

(3) 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

(3) 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.

Sacred Music

MUSA 6260-6269 - Special Topics in Sacred Music

(1-3)

Social Work

SWRK 6060 - Social Work Integrated Health

(3) 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 **

(3) (7460) 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 6934 - Child Welfare Policy/Services

(3) 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

(3) (7420) 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 of Social Work **

(3) N/A 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

(3) 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

(6) 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 7001 - Skills Prof Pract SWRK **

(3) 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

(3) 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

(3) 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 **

(3) 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 7006 - Dual Diagnosis

(3) The course explores models for the treatment and rehabilitation of individuals with a psychiatric disability complicated by substance abuse issues. Students will demonstrate an understanding of stabilization, recover, and relapse prevention approaches to assist individuals experiencing a combination of chemical dependency and mental illness. Students will compare and contrast program models and treatment interventions.

SWRK 7013 - Treatment of Trauma

(3) 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 7014 - Brief Intervention

(3) An elective course designed to provide students with the knowledge and skills necessary to utilize brief interventions in social work practice. Theory and practice of planned short-term, and crisis interventions including an introduction to motivational interviewing and solution focused brief therapy are addressed. Learners are introduced to methods for improve treatment compliance and increase motivation for change with specific target populations. PREREQUISITE(S): Admission to the MSW program or permission from MSW director or instructor.

SWRK 7016 - Adv. Individual Child/Youth **

(3) The course covers advanced direct practice techniques with children and youth. Techniques include cognitive behavioral therapy and other evidence-based techniques. PREREQUISITE(S): SWRK 7001, SWRK 7002, & SWRK 7005

SWRK 7018 - Adv. Individual Adults

(3) The course covers advanced direct practice with adults. Treatment techniques include cognitive behavioral therapy, motivational interviewing, and other evidence based practices. PREREQUISITE(S): SWRK 7001, SWRK 7002, & SWRK 7005

SWRK 7021 - SW Across the Lifespan **

(3) 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

(3) 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 **

(3) 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 **

(3) 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 7030 - Social Welfare Policy/Services **

(3) This required course explores the historical process leading to, and the philosophical underpinings 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 7032 - Adv. Community Child/Youth **

(3) The course covers advanced community practice with children and youth. It examines public policies impacting children and youth. It covers the basics of program administration including budgeting and policy implementation in preparation for administrative practice. PREREQUISITE(S): SWRK 7022 & SWRK 7030

SWRK 7033 - Adv. Community Adults

(3) (7460) The course covers advanced community practice with adults. Students learn policies and administrative practices to serve adults and older adults, explore policy and program implementation programs, learn administration and budgeting basics, understand community practice models, and become prepared to assume leadership positions in social service agencies and organizations. PREREQUISITE(S): SWRK 7022 & SWRK 7030

SWRK 7040 - Advanced Social Work Theory **

(3) 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): Admission to the MSW program or permission from MSW director or instructor.

SWRK 7041 - Play Therapy **

(3) 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 7050 - Advanced Standing Field **

(1) (7420) 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

(3) 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

(3) 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.

SWRK 7053 - Field Placement III **

(3) 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.

SWRK 7054 - Field Placement IV **

(3) 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.

SWRK 7055 - Integrative Field Seminar I **

(3) Course covers preparation for advanced social work practice and preparation for the social work licensure exam.

SWRK 7056 - Integrative Field Seminar II **

(3) (6501) Course covers preparation for advanced social work practice and preparation for the social work licensure exam.

SWRK 7060-7065 - Special Topics in Social Work

(1-3) .

SWRK 7070 - Independent Study

(1-3) Provides an opportunity for directed advanced reading, an advanced field project, and/or research in special areas of social work. Provides in-depth learning opportunites 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 7948 - Clinical Social Work Process & Technique

(3) 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 7996 - Thesis

(1-6) 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

(3) The purpose of this advanced course is to further prepare doctoral students to organize and conduct quantitative research. Students will learn to use theory to shape conceptual models and approaches; understand the importance of ethics and cultural humility in research; and use and evaluate data to make decisions in social work practice.

SWRK 8040 - Advanced SW Theory **

(3) 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 - Leading Public Discourse SW

(3) 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.

SWRK 8050 - Writing for Publication

(3) Course introduces students to the process of writing for publication. Course will be a project-focused seminar in which students will formulate a concept for a scholarly paper, draft the paper, and rewrite the paper based on a review from peers. Course will also cover the process of writing an abstract for a scholarly presentation.

SWRK 8055 - Informatics & Data Driven

(3) 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.

SWRK 8060 - Developing Fundable Proposals **

(3) 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. Foundation 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.

SWRK 8065 - Pedagogy in SW

(3) 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 8070 - Managing SW Practice I

(3) The goal of this course is to provide the basis on which students can familiarize themselves with the laws and the basics of setting up a private practice to develop an effective framework for a successful business.

SWRK 8075 - Reflective Supervision

(3) 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.

SWRK 8080 - Managing SW Practice II

(3) The course, the second in the series of social work organization management, is designed to provide social work professionals and leaders the skills and knowledge to direct and administer social service and public organizations at all levels. The course covers strategic planning, working with boards, human resource management, financial management, and dealing with the IRS.

SWRK 8085 - Innovations in SW Practice

(3) 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 9000 - Dissertation

(1-6) Candidates for graduation will have submitted three high-quality products. At least one of these three products will include a publication quality research article for peer review. Other products may include a peer-reviewed presentation or unpublished report. Grade of S/U, or IP will be given.

Sociology

SOCI 6210 - Rise of Sociological Theory

(3) 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 **

(3) 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

(3) Multivariate analysis of social data; use of computer programs for data management and statistical analysis.

SOCI 6425 - Environmental Sociology

(3) Role of social institutions, power, and inequality in shaping environmental discourse and action; dynamics of environmental social movements.

SOCI 6842 - Soci Of Occup & Prof

(3) (6301) 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

(3)

SOCI 7210 - Theory Seminar

(3) An advanced analysis of recent developments in sociological theory, including the relationship of theory to empirical research.

SOCI 7212 - Mult Racial Femnst Thry

(3) (6304) 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

(3) 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

(3) Preparation, analysis, and interpretation of existing quantitative data; data processing, multivariate analysis, interpretation, and writing results for research projects. PREREQUISITE(S): Approval of MALS program coordinator. Must be taken during the first semester in the MALS program.

SOCI 7325 - Sem Qualitative Resrch

(3) (6420) 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

(3) 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

(3) (6430) 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. PREREQUISITE(S): Approval of MALS major advisor and MALS program coordinator.

SOCI 7421 - Racial & Social Inequal

(3) (7810). 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. PREREQUISITE(S): Approval of Internship Contract

SOCI 7442 - Sociology Of Poverty

(3) 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

(3) 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

(3) 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. PREREQUISITE(S): Admission to MALS program or permission of instructor and MALS program coordinator.

SOCI 7511 - Theories Of Deviance

(3) (6532) A seminar in the sociological approaches to the study of deviance and social disorganization with an emphasis on current sociological theory and research.

SOCI 7631 - Urban Theory Seminar

(3) 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 Cmmty Stds

(3) 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. Must be repeated for a minimum of 12 hours credit (4 semesters).

SOCI 7711 - Sem Globlztn/Soc Chng

(3) 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

(3) 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

(3) 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. PREREQUISITE(S): Successful completion of UNIV 7100; approval of MALS special project contract by major advisor and MALS program coordinator

SOCI 7811 - Sociology of Organizations

(3) (7460). 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. PREREQUISITE(S): Approval of Professional Project contract by faculty advisor and the MPS program coordinator

SOCI 7820 - Sem Soci Of Education

(3) Schools and school life from sociological perspective; how societal objectives are translated into school policies and practices.

SOCI 7830 - Seminar In Family

(3) (7420). 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

(3) Sociological understandings of society, demographic processes, organizations, behavior, and health.

SOCI 7852 - Soci Mental Illness

(3) 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

(3) 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

(3) 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. May be repeated with change of topic for 9 hours

SOCI 7901-7909 - Special Topics in Sociology

(1-3)

SOCI 7912 - Directed Indiv Study

(1-4) 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

(1-3) 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 7996 - Thesis

(1-6) Supervised research in preparation for advanced degree thesis. Grades of S, U, or IP will be given.

SOCI 8210 - Theory Seminar

(3) An advanced analysis of recent developments in sociological theory, including the relationship of theory to empirical research.

SOCI 8212 - Mult Racial Femnst Thry

(3) 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

(3) 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. May be repeated for a maximum of 3 credits

SOCI 8325 - Sem Qualitative Resrch

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 8511 - Theories Of Deviance

(3) A seminar in the sociological approaches to the study of deviance and social disorganization with an emphasis on current sociological theory and research.

SOCI 8655 - Socio Found Cmmty Stds

(3) 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 Globlztn/Soc Chng

(3) 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

(3) 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

(3) 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

(3) (7460). 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

(3) (7420). 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

(3) Sociological understandings of society, demographic processes, organizations, behavior, and health. May be repeated for a maximum of 9 credits.

SOCI 8852 - Soci Mental Illness

(3) 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

(3) 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

(1-3)

SOCI 8912 - Directed Indiv Study

(1-4) 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 Linguistcs

(3) (6501). Current research in linguistics, psycholinguistics, and sociolinguistics and their contribution to second language teaching and second language learning.

SPAN 6307 - Adv Grammar/Writing

(3) Special problems in Spanish grammar pertaining to the preterite and the imperfect, ser" and "estar May be repeated

SPAN 6308 - Adv Grammar/Speech

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Idiomatic construction, word formation, culturally connotated vocabulary and modern style techniques through intensive text analysis and writing. RECOMMENDED: SPAN 6302.

SPAN 7301 - Spanish Phonology

(3) (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

(3) Spanish syntax and compositional semantics: constituent structure, syntactic categories and grammatical relations, prepositional semantics, quantification, modality, and tense.

SPAN 7304 - Evolution Of Spanish

(3) (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

(3) 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.

(3) Study of linguistic features of Spanish in the U.S. and the sociolinguistic factors (historical, political, sociala nd cultural) that affect U.S. Spanish.

SPAN 7420 - Medieval Span Lit

(3) (6420). Reading of Old Spanish; Medieval Spanish literature from Mozarabic lyric through La Celestina.

SPAN 7421 - The Golden Age

(3) Don Quixote and other classic works of the sixteenth and seventeenth centuries.

SPAN 7430 - 18th/19th Cent Span Lit

(3) (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

(3) 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

(3) 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

(3) 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

(3) 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

(3) (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

(3) Evolution of the Spanish American novel and short story from their beginnings through early twentieth century.

SPAN 7562 - Cntmp Sp Am Prose Fctn

(3) Representative Spanish American novels and short stories of the twentieth century since 1940.

SPAN 7591 - Seminar Sp Amer Lit

(3) 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

(1-6) May be repeated for credit toward the concentration in Spanish up to 12 hours.

SPAN 7692 - Research in Lit and Culture

(3-6) 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

(3) 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

(3) 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

(3) Methodology, theory, practice of teaching Spanish for specific purposes (medical, business, art, etc). Course will be conducted in Spanish.

Special Education

SPED 6000 - Meth/Mat Modrt/Sevr Dis

(3) Curriculum, methods, and materials applicable to special educational needs of moderately/severly disabled learners, emphasizing educational and vocational skills that facilitate normalization and independent living.

SPED 6111 - Intro/Applied Behav Analysis

(3) Principles and procedures of applied behavior analysis with emphasis on application to change human behavior.

SPED 6112 - Assess/Measure/Appl Behav Anly **

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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 Excptional Learnr **

(3) 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 **

(3) 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

(1-6) 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

(3) 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

(3) 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

(3-6) 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

(2-3) 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

(1-3) Current topics in special education. May be repeated with a change in topic.

SPED 7101 - Foundations E Chld Sped

(3) 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

(3) 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

(3) 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 **

(3) 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 **

(3-6) 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

(3) 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

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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

(3) 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

(3) 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

(3) Focuses on the acquisition of basic speech/language skills in the development of effective communication in children with hearing impairments.

SPED 7226 - Manual Communication

(3) 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

(3) Modern trends, lesson planning, teaching strategies, and assessment tools in reading instruction for children with hearing impairment.

SPED 7241 - Superv Practicm In Sped

(3-9) 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

(3) (RECR 7145, SLC 7142) 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 Learng Disab

(3) Remedial approaches for children with learning disabilities; emphasis on developmental sequence and educational practices.

SPED 7511 - Intellectual Disabilities

(3) 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

(3) 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

(3) Overview of the principles, processes, concepts, and ethics of behaviorism and behavior analysis.

SPED 7516 - Adv Prin/Conc Appl Behv

(3) In-depth examination of the philosophy, processes, concepts, and the principles of behaviorism and applied behavior analysis. PREREQUISITE(S): SPED 7514/SPED 8514

SPED 7517 - Func Anlys/Treat Prob Behv

(3) Examines principles, issues, approaches, and strategies for conducting Functional Behavior Assessment and Functional analysis. PREREQUISITE(S): SPED 7514/SPED 8514

SPED 7518 - Evidence-Based Prac in ABA

(3) Study of instructional strategies developed from applied behavior analysis, including Direct Instruction, Precision Teaching, Discrete Trial Training, and others. PREREQUISITE(S): SPED 7514/SPED 8514

SPED 7519 - Prac/Appld Behav Anlys

(3-12) Supervised experience in the application of behavior analytic strategies in education settings; requires 20 hrs per week (10 direct hrs and 10 indirect hrs) for 1000 hrs total. Must be repeated for a minimum of 12 hours credit (4 semesters). On campus seminars addressing special topics are required and count as group supervision according to the BACB. 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

(3) 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/SPED 8514

SPED 7521 - Facilitating Generalization and Maintenance of Learning

(3) Provides an overview of different fields of research and application of behavior analytic principles. PREREQUISITE(S): SPED 7514/SPED 8514

SPED 7522 - Tiered Interventions

(3) (SLC 7332, 7420) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(1-6) Opportunity for self-directed, independent study in special education.

SPED 8010 - Ethical Issues in ABA

(3) 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

(3-6) 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

(3-6) 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

(1-3) Current topics in special education. May be repeated with a change in topic.

SPED 8101 - Foundations E Chld Sped

(3) 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

(3) 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

(3-6) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) Academic methods, remediation, and educational planning for individuals with disabilities. Field Experience Required.

SPED 8212 - Content Methods in Special Edu

(3) 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

(3) 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

(3) 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

(3) 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 Learng Disab

(3) Remedial approaches for children with learning disabilities; emphasis on developmental sequence and educational practices.

SPED 8511 - Intellectual Disabilities

(3) 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

(3) 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

(3) Overview of the principles, processes, concepts, and ethics of behaviorism and behavior analysis.

SPED 8516 - Adv Prin/Conc Appl Behv

(3) In-depth examination of the philosophy, processes, concepts, and the principles of behaviorism and applied behavior analysis. PREREQUISITE(S): SPED 7514-SPED 8514

SPED 8517 - Func Anlys/Treat Prob Behv

(3) Examines principles, issues, approaches, and strategies for conducting Functional Behavior Assessment and Functional analysis. PREREQUISITE(S): SPED 7514/SPED 8514

SPED 8518 - Evidence-Based Prac in ABA

(3) Study of instructional strategies developed from applied behavior analysis, including Direct Instruction, Precision Teaching, Discrete Trial Training, and others. PREREQUISITE(S): SPED 7514/SPED 8514

SPED 8519 - Prac/Appld Behav Anlys

(3-12) Supervised experience in the application of behavior analytic strategies in education settings; requires 20 hrs per week (10 direct hrs and 10 indirect hrs) for 1000 hrs total. Must be repeated for a minimum of 12 hours credit (4 semesters). On campus seminars addressing special topics are required and count as group supervision according to the BACB. 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

(3) 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/SPED 8514

SPED 8521 - Facilitating Generalization and Maintenance of Learning

(3) Provides an overview of different fields of research and application of behavior analytic principles. PREREQUISITE(S): SPED 7514/SPED 8514

SPED 8522 - Tiered Interventions

(3) 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

(3) 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

(3-6) 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

(3) 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

(3) (ISDS 7020) 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

(3) (ISDS 7080) 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

(3) (ISDS 7110) 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.

SPED 8622 - Readings In SPED

(1-3) (ISDS 7120) Individually directed readings culminating in synthesis of ideas. May be repeated with change of topic for 9 hours.

SPED 8623 - Supervised Research SPED

(1-6) (ISDS 7170) 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

(3) (ISDS 7201) 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 **

(3) 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

(3) 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

(1-6) 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 6393 - Intro to eSports

3 Intro to eSports is an introductory examination into the growing industry of competitive gaming. Topics include the history of eSports, management of eSports, the creation and implementation of eSports events, and career opportunities within the eSports segment of the sport industry.

SLC 6410 - College Athletics Compliance

2 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.

SLC 6622 - Fan Behavior/Rivalry **

(3) 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 **

(3) (HMEC, CSED 6602) Evolution, current application, and future potential of computers for sport commerce. PREREQUISITE(S): Permission of instructor.

SLC 6902-6911 - Special Topics SLC

(1-3) Current topics in sport and leisure commerce. May be repeated with change in topic.

Sport and Leisure Studies

SLS 6141 - Seminar/Chronology of Sport

(3) 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 **

(3) 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 **

(3) 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

3 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

(1-6) 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

(1-9) 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 **

(1-3) May be repeated for a maximum of 3 credits. Grades of S, U, or IP will be given.

SPRT 7152 - Spec Problems in SPRT **

(1-3) 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

(3) 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

(3) 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 **

(3) Influence of historical, philosophical, and social elements upon sport and leisure management policies, practices, and programs.

SPRT 7331 - SPRT Promotional Culture

(3) 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 - Commrcl Rec/Travl Toursm

(3) 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

(3) Relationship between sport, leisure, and the dominant gender practices, experiences, and identities that structure everyday life within contemporary society. PREREQUISITE(S): PREREQUISITE: SPRT 7321, 7331, or permission of instructor.

SPRT 7361 - Race & Ethnicity in SPRT

(3) 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. PREREQUISITE(S): PREREQUISITE: SPRT 7321, 7331, or permission of instructor.

SPRT 7371 - Sprt Comrce in Global Mrkt

(3) 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

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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 **

(3) 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

(3) 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 **

(3-6) 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

(3) Evolution, current application, and future potential of computers for sport commerce.

SPRT 7950 - Applied Project in SPRT **

(1-6) 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

(3) 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

(3) 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

(3) Role of purchasing function within organization; purchasing process; procurement and commodity strategy; insourcing/outsourcing; 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 **

(3) (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

(3) (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 - Intnl Prodctn Oper Mgmt

(3) (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

(3) (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 risk management, and enabling role of information technology across the supply chain.

SCMS 7310 - Sem Prod Operatns Mgt

(3) (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

(3) (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

(3) (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 **

(3) (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

(3) (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

(3) (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

(3) (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

(3) (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

(3) (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

(3) (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

(3) (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

(3) (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

(3) (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

(3) (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

(3) (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

(3) (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

(3) (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

(3) (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

(3) (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

(3) (ISDS 8540) Multivariate techniques available to the business researcher; use of computerized statistical packages and their interpretation.

SCMS 8921 - Sem SCMS Research

(3) (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

(3)

TEAE 6260 - Teach ESL w/Internet Tech

(3)

TEAE 6300 - Multicultural Education

(3)

TEAE 6437 - Assessment for ESL

(3)

TEAE 6500 - Linguistics

(3)

TEAE 6501 - Modern English Grammar

(3)

TEAE 6550 - Latin Amer/Country/Peop

(3)

Teacher Education Licensure

TELC 7001 - Adolescent Development **

(3)

TELC 7002 - Assessment/Evaluation **

(3)

TELC 7003 - Managing Learning Environment **

(3)

TELC 7004 - Survey Exceptnl Chldrn **

(3)

TELC 7005 - Teaching and Learning w/Tech **

(3)

TELC 7006 - Teacher/Agent Of Change **

(3)

Teacher Education Special

TEAS 6001 - Col Prac/Trnd/Issue/Char Sp Ed

(4)

TEAS 6003 - Assess Procedure in Special Ed

(3)

TEAS 6004 - Appl Behavior Interven/Supp

(4)

TEAS 6005 - Read Methods Across Curriculum

(3)

TEAS 6006 - Assistive Technology

(3)

TEAS 6007 - Math Method Across Curr

(3)

TEAS 6008 - Teach Mild/Moderate

(4)

TEAS 6009 - Adaptive PE in Special Educ

(2)

TEAS 6010 - Methods Instruct/Teach Compre

(4)

TEAS 6011 - Assess Infant/Toddlers

(2)

TEAS 6012 - Instruction: Early Child/Sp Ed

(4)

Theatre

THEA 6209 - Advanced Scenic Production

(3) 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. May be repeated for a maximum of 6 hours credit. PREREQUISITE(S): permission of instructor.

THEA 6210-6219 - Special Topics in Theatre

(1-3)

THEA 6220 - Acting Through Song I

(3) 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

(3) Transcription for International Phonetic Alphabet (IPA). Voice and dialect technique for conveying dramatic intention and character.

THEA 6222 - Asian Theatre

(3) 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

(3) 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

(3) Study of basic written music theory and aural skills to aid the comprehensive theatre professional.

THEA 6455 - Directing Narrative Theatre

(3) 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

(3) Exploration of language based characterization as it evolves from structure and style of text.

THEA 6501 - Adv Movement Styles

(3) 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 - Creative Dramatics

(3) Basic techniques and theories for the use of dramatization in elementary and secondary education; topics include socio-drama, dramatization of school subjects and daily concerns, and improvisation and creation of dramatic plays. (Offered alternate years).

THEA 6511 - Automation & Mechanization

(2) 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

(2) 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

(2) 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

(2) 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

(2) 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

(3) 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

(3) 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

(3) An examination of the movement and trends in theatre during the 20th and 21st centuries.

THEA 6544 - Gay and Lesbian Dramatic Literature

(3) 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

(3) Survey of the shaping forces, history, art and craft of American musical. (Offered alternate years)

THEA 6549 - Theatre History

(3) 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

(2) 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 Technolgy

(2) 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

(2) 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. May be repeated for a maxmium of 6 hours credit. PREREQUISITE(S): Permission of instructor.

THEA 6559 - Thea/African Diaspora

(3) 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

(3) 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

(2) 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 6592 - Thtr Arch/Facilty Plan

(3) 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

(3) Educational experience for the actor in the media of film and television. Offered alternate years.

THEA 7210-7219 - Special Topics in Theatre

(1-3)

THEA 7312 - Rigging Studio

(1) 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 - Graduate Design Seminar

(1) 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. NOTE: Offered alternate years.

THEA 7314 - Collaborative Models for Theatre Professionals

(1) 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

(1) 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

(1) 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

(1) 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

(3) 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 7521 - Stage Direction

(3) 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 7526 - Directing Studio

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(3) 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

(2) 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

(2) 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

(2) 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

(3) 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

(2) 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

(2) 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

(2) 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

(2) 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

(3) 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

(3) 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

(2) 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

(3) Major documents in dramatic theory and criticism from Aristotle to present. Offered alternate years.

THEA 7582 - Analysis Dramatic Lit

(3) 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

(6) 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

(1-6) Supervised work completed in a professional setting. Repeatable for a maximum of 6 hours.

THEA 7993 - Special Problems

(1-3) 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

(3-6) 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

(1-3)

Urban Affair and Public Policy

SUAP 7100 - Public Policy Statistic **

(3) 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.

SUAP 8100 - Public Policy Statistic

(3) 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.

UAPP 8010 - Exploration of Urban Research Theory

(3) 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

(3) 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

(3) 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

(3) 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.

Women's and Gender Studies

WMST 7320 - Women&Multi-Cultrl Exp

(3) 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

(3) Readings and written assignments designed to provide additional comprehension of ideas and skills related to a student's concentration.

WMST 8380 - Public Presntn Research

(3)

University Libraries

LBRY 6020 - Research and Information Literacy in Hospitality and Resort Management

3 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