

# Saint Louis University

CATALOG

GRADUATE EDUCATION

2011 - 2012

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The programs of Saint Louis University are open to all without regard to race, color, sex, age, national origin, religion, sexual orientation, disability, or veteran status. All University policies, practices, and procedures are administered in a manner consistent with its Catholic and Jesuit identity. Programs and activities located in facilities not easily accessible to disabled persons will be made accessible through relocation or other means upon request. For general information, call 314.977.2222.

The 504 and ADA Coordinator, the University's Affirmative Action Officer, is located in DuBourg Hall, Room 36; Telephone 314.977.3838.

This catalog is for information purposes and does not constitute a contract. Although the Catalog was prepared with the latest information available at the time of publication, the statements concerning fees, courses, admission and graduation requirements, general regulations and curricula are subject to change. Graduate Education's Webpage: [www.slu.edu/x52519.xml](http://www.slu.edu/x52519.xml)

## **The Mission of Graduate Education at Saint Louis University:**

The Mission of Saint Louis University's Graduate Education is to advance the frontiers of knowledge and technical expertise and to prepare students to make their own contributions to such advances in their disciplines and professions by helping them carry out their responsibilities in an ethical and professional manner.

In realizing this mission, Graduate Education at Saint Louis University is committed to specific goals and objectives:

- To articulate a vision of excellence for the graduate community
- To bring an institution-wide perspective to all post-baccalaureate endeavors
- To maintain high academic standards across all academic disciplines
- To promote the ideals of a Catholic, Jesuit education
- To promote the research mission of the University
- To enhance the community of scholars among both graduate students and faculty
- To develop strategies for graduate education that contribute to and enhance undergraduate education
- To serve as an advocate for graduate education
- To emphasize the institution-wide importance of educating future college, university and high school teachers, and professionals in a variety of fields
- To serve as an advocate for issues and constituencies critical to the success of graduate education
- To support and further the non-academic interests and needs of graduate students

# General Information

## THE UNIVERSITY

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### History

Saint Louis University, a private university under Catholic and Jesuit auspices, traces its history to the foundation of the Saint Louis Academy by the Right Reverend Louis William DuBourg, Bishop of Louisiana, in 1818. At Bishop DuBourg's request, the Society of Jesus assumed the direction of the school in 1827. This small Jesuit college received its charter as Saint Louis University in 1832, becoming the first university established west of the Mississippi River. The University settled at its present site on Grand Boulevard in 1888.

The University is physically divided into three campuses. The Frost Campus is located in the Grand Avenue midtown area, and the Health Sciences Campus one mile to the south. The third campus, the home of Saint Louis University in Spain, is in Madrid.

Saint Louis University is classified as a Research University: High Research Activity by the Carnegie Foundation for the Advancement of Teaching. The University enrolls more than 14,000 full- and part-time students including a significant number from countries around the world.

The University is presently composed of the following schools, colleges, and degree-granting centers.

- College of Arts and Sciences (established in 1818)
- School of Law (1842)
- College of Philosophy and Letters (1898)
- School of Medicine (1903)
- John Cook School of Business (1910)
- Parks College of Engineering, Aviation, and Technology (1927)
- School of Nursing (1928)
- Doisy College of Health Sciences (1979)
- School of Public Health (1991)
- School for Professional Studies (1996)
- College of Education and Public Service (1998)
- Albert Gnaegi Center for Health Care Ethics (1979)
- Center for Advanced Dental Education (1994)
- Center for Sustainability (2010)
- Center for Outcomes Research (SLUCOR) (2002)
- Center for Intercultural Studies (2011)

### Degrees Offered

Saint Louis University offers a wide array of research and professional, post-baccalaureate degree programs. Graduate certifications are available for several programs. [Click here](#) to see a complete list of post-baccalaureate degree programs.

### Accreditation

Saint Louis University's primary accreditation is through the Higher Learning Commission of the North Central Association of Colleges and Schools. Some schools, colleges, and University programs have also attained accreditation from professional disciplinary associations.

### Objectives

In keeping with its mission as a Jesuit institution dedicated to striving for excellence under the inspiration of the Catholic faith, Saint Louis University seeks to establish a collegial environment in which those of diverse cultural backgrounds and religious beliefs can participate in the community in a spirit of cooperation and mutual respect.

Based on the conception of the person as a free and responsible agent capable of making a difference for good or ill in the world, the University directs its educational efforts to help students develop as critically reflective and socially responsible persons, capable of exercising leadership in advancing the cause of human good in the world, through service to others.

The University's commitment to academic excellence is evident in its graduate programs, which have a twofold purpose: to advance the frontiers of knowledge and technical expertise in their disciplines and professions, and to prepare students to make their own contributions to such advances by helping them carry out their responsibilities in an ethical and professional manner.

### The University and the St. Louis Metropolitan Area

Saint Louis University is located in the center of a metropolitan area of more than two and one-half million people. By heritage and decision it remains an urban institution, committed to preserving and enhancing the quality of life in a nation that is 70% urban. The University's midtown setting and its community outreach programs contribute to an

environment of learning which relates educational experience to important contemporary issues.

In addition to the Museum of Contemporary Religious Art (MOCRA) and The Saint Louis University Museum of Art directly on the SLU campus, the close proximity of the Midtown City Center Redevelopment project makes available the rich cultural opportunities of a developing fine and performing-arts district that includes: Powell Hall, the home of the famed St. Louis Symphony, the Contemporary Art Museum St. Louis, The Pulitzer Foundation for the Arts, the Fox Theater, the Sheldon Auditorium, the Grandel Square Theater, the Black Repertory Theater, and a number of galleries. Close by are the world famous Missouri Botanical Garden and Forest Park with its Art Museum, Municipal (“Muny”) Opera, Zoo, and Science Center. The University’s central location gives easy access to other recreational and cultural attractions of the metropolitan area. The Madrid Campus, also distinctively urban, is located in a residential neighborhood along with other private and public universities. Saint Louis University in Madrid sponsors community outreach programs and participates in the rich cultural heritage of Spain’s capital.

## ACADEMIC SUPPORT SERVICES

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### University Libraries

Saint Louis University is home to four libraries: the Omer Poos Law Library, the Medical Center Library, the Pius XII Memorial Library, and the Vatican Film Library. A library also resides on the Madrid Campus. SLU-affiliated students and faculty have access to over 40,000 online databases, e-books, and other information in electronic format -- both within each library and remotely. All libraries can be used by SLU faculty, students, and staff. Each library has wireless access both within and outside each building.

#### [Pius XII Memorial Library](#)

Pius Library, the main library on campus, houses over 1.8 million volumes and provides students with quiet and group study spaces, current technologies, a café, writing and testing centers, as well as subject expert faculty librarians to assist in research. It is also home to the Vatican Film Library, rare books and manuscripts, and the University Archives.

#### [Medical Center Library](#)

The Medical Center Library (MCL), located on the second floor of the Learning Resources Building, is the primary library for medicine, nursing, and the allied health professions.

MCL provides areas for quiet research and study, a commons area for information searching, group “breakout” rooms, comprehensive information resources, and helpful services provided by expert faculty librarians.

#### [Omer Poos Law Library](#)

Located on the Frost Campus in Morrissey Hall, the Omer Poos Law Library, has an impressive research collection of over 600,000 volumes with significant holdings in federal and state law as well as strong foreign law and special collections. In addition to its print collections, the Library provides access to an incredible array of electronic resources and subscribes to numerous on-line services. SLU Law research librarians, who hold both J.D. and master’s degrees in information science, work closely with students to guide them through the research process.

Saint Louis University is a member of MOBIUS, a consortium of libraries in the state of Missouri which includes 64 Missouri public and private academic libraries for resource sharing of over 20 million volumes held by member libraries. MOBIUS Courier service delivers requested items to the home library within 48 hours of request. Madrid Campus students have a similar service available to them in Spain.

#### [Special Collections](#)

The world renowned [Vatican Film Library](#) and the [University Archives](#), both located in [Pius Library](#), provide extensive resources for research and study. The Archives focus on University history, Catholic and Jesuit history as it relates to the University, and the role of the University in the life and development of the St. Louis region. The Vatican Microfilm Collection consists of copies of most of the manuscript collection of the Vatican Library in Rome. Other special collections are available, both online and in print.

### Academic Computing

A wide range of computing, networking, training, consulting assistance, and support resources are available on the Frost, Health Sciences and Madrid Campuses for instructional, research, and administrative purposes. Students, staff, faculty members have access to wireless internet all across campus.

### Academic Centers and Institutes

The University’s academic resources include a number of centers and institutes that serve as practicum and internship sites and/or opportunities for interdisciplinary study and research. [Click here](#) for a complete list of degree-granting and non degree-granting centers and institutes.

## Office of the Registrar

[The Office of the Registrar](#) has primary responsibility for registration, recording of students' academic progress (and maintenance of the students' permanent records), distribution of transcripts, certifications of student status, Veterans' certifications (for benefits), diplomas, and the publication of class schedules, the Undergraduate Catalog, and related academic materials.

## Educational Technology Services

[The Instructional Media Center](#), located in Xavier Hall Annex on the Frost Campus, provides the University with classroom-presentation equipment, student video-viewing cubicles, distance-learning support, and assistance for the production of audio-visual instructional materials in a "do-it-yourself" laboratory.

The Instructional Technology Center in the Caroline building also offers self-service multimedia viewing and materials production to students and faculty at the Health Sciences Campus. Both sites host extensive catalogs of instructional videos for faculty checkout or student reserve viewing.

## The Paul C. Reinert, S.J., Center for Teaching Excellence

[The Reinert Center for Teaching Excellence](#), located in Pius XII Library, was established on July 1, 1997, to reinforce Saint Louis University's commitment to quality teaching.

The Center provides a supportive learning environment for graduate students and faculty to develop their instructional skills and individual pedagogical styles. Among the services offered by the Center are one-on-one teaching consultations, classroom observations, workshops and seminars on various teaching topics, and a portfolio retreat for full-time faculty. In collaboration with Graduate Education, the Center conducts the annual Graduate Assistant Orientation in August. A major activity of the Center continues to be the Certificate in University Teaching Skills, designed to help graduate students develop as educators. Selected mentors and the Center staff guide participants through the program.

## Office of International Services

[The Office of International Services](#) has the goal of enriching the academic experience of the Saint Louis University campus in St. Louis and community through the promotion of a global perspective in the University's education programs and through the development of international education and exchange opportunities.

Services provided through International Services include assistance with applications and admissions, advising on immigration/visa concerns, support services for international

student and scholars, and international student/scholar advocacy. The Center's services also include cultural and social activities and information on university policies and procedures. Orientation programs, the International Student Ambassador program, and the host-family program ease the transition for international students and scholars arriving at Saint Louis University.

International Services also provides information and support related to admissions, housing, visas, and programs at the Madrid Campus.

## English as a Second Language

The University offers programs that serve international students in their transition to the English language, North American culture, and higher education. SLU's [English as a Second Language \(ESL\) program](#) provide instruction at the high intermediate/advanced levels for students needing to improve their language skills in preparation for graduate study. In addition, the ESL program offers instruction in research and writing for graduate students. The program also evaluates English-language proficiency of all international students new to the University and recommends appropriate English instruction or skill-building activities as needed to support the student's academic program.

## Midwest Catholic Graduate Schools Consortium

The Midwest Catholic Graduate Schools Consortium was created to foster cooperative endeavors in graduate education and research among four universities: Loyola University-Chicago, Marquette University, University of Notre Dame, and Saint Louis University. The Consortium has established a visitation program for graduate students and from time to time investigates joint research applications. Students should check with their major field departments for details.

## STUDENT LIFE AND SERVICES

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### Graduate Student Association

[The Graduate Student Association \(GSA\)](#) represents all full-time and part-time students at Saint Louis University enrolled in Graduate Education programs whose departments are in good standing with the GSA per the GSA Bylaws. The GSA is governed by elected officers, and its General Assembly consists of one representative from each graduate degree program. In this way, the GSA is able to recognize interests

and concerns across the wide spectrum of graduate disciplines and serve as the focal point for the graduate program's student concerns.

The GSA also sponsors the annual Graduate Student Research Symposium which showcases graduate student research, in both paper and poster formats, throughout the University. Graduate students may also apply for awards from the GSA for conference presentation and attendance, publication assistance, exam preparation, and summer research support towards thesis and dissertation preparation.

The GSA is affiliated with the National Association of Graduate and Professional Students (NAGPS) and is also a chartered member of the national graduate and professional student honor society, Alpha Epsilon Lambda. The Associate Vice President for Graduate Education serves as the faculty advisor to the GSA.

## Student Health and Counseling Center

[The Student Health and Counseling Center](#) of Saint Louis University, located in Marchetti Towers East, is dedicated to maintaining and improving the overall health of the student community in St. Louis. This is accomplished through a broad spectrum of primary health services: medical, diagnostic, and clinical procedures, as well as a variety of educational and wellness programs. All Saint Louis University students are eligible to utilize the Student Health Center.

Should students need more extensive medical attention than can be given at the Student Health Center, they will be referred to [SLUCare](#). Students in need of urgent care will be transported to the University Hospital's Emergency Room, where a full range of medical services is available.

The Madrid Campus provides students registered for one or more credit hours with MULTI SANITAS medical care during the length of each term. Coverage is extended to all cities and towns where Sanitas has duly authorized centers and/or participating physicians. When services included in the contract are not available in a given area, students are entitled to receive them in another area upon authorization from SANITAS.

Counseling services are available to all students in the Student Counseling Center also located in Marchetti Towers East. Counseling services are also available to all students in Madrid. Individual, group, and couples counseling are offered. Students may seek help for a variety of concerns including important decisions about personal life, dealing with depression or stress, coping with traumas such as divorce or death, physical, emotional or sexual abuse, date rape or rape, and dealing with alcohol, drug, or eating concerns. Counseling services are confidential.

## Housing and Residential Life

[The Department of Housing and Residence Life \(HRL\)](#) assists graduate students in locating off-campus houses. The department maintains a listing of off-campus realtors, landlords and agencies within short distances of the University's campuses.

The Office of Student Life at the Madrid Campus facilitates the placement of students in university-sponsored host families and provides information for those seeking other housing opportunities in Madrid.

Contact HRL at: [reslife@slu.edu](mailto:reslife@slu.edu)

## Bookstores

Bookstores serving the University are located in the [Busch Student Center](#) on the Frost Campus, in the School of Medicine Building (Schwitalla Hall) on the Health Sciences Campus, and in Padre Rubio Hall on the Madrid Campus. Each bookstore stocks required and recommended textbooks, general reading materials, study aids, school supplies, emblematic clothing, gift items, and snacks.

## Campus Ministry

[Campus Ministry](#) focuses on promoting the religious life of the University through liturgies, special events, retreats, service opportunities and sacramental preparation. Several programs are dedicated to graduate and professional school students.

The Frost Campus offices are located in the Eckelkamp Center for Campus Ministry, immediately northwest of the Clock Tower. Offices on the Health Sciences Campus are located in Doisy 3049, School of Nursing Room 325, and Caroline Hall, Room 207. Priests and ministers of several denominations are available for spiritual direction and pastoral counseling including marriage counseling.

## Career Services

[Career Services](#) is available to help students and alumni find their career paths by discovering their passion and purpose. Graduate students are encouraged to consult with a career counselor early in their graduate program and to seek opportunities for career-related experiences throughout their academic programs.

Counselors in Career Services can help graduate students clarify their professional goals, enhance their resumé's, create job-search plans, develop networking skills, and hone their interviewing skills.

## Recreational Facilities

[The Simon Recreational Center](#) features a wide range of sport and recreation facilities, services, and programs. The Center's facilities include five racquetball courts, a squash court, six multipurpose courts (for basketball, volleyball, tennis, etc.), a fully equipped, modern, weight and cardiovascular area, a fitness testing lab, a 40-meter swimming pool, saunas, whirlpool, spinning studio and two multipurpose rooms, and an indoor running track. Recent expansions include more than 150 new pieces of fitness equipment, a juice bar and lounge, additional locker rooms, several multi-purpose rooms, full wellness suite, climbing wall, gaming area, additional locker space and an event room. In addition, there is another weight and cardiovascular room located on the lower level of Salus Center on the Health Sciences Campus.

Outdoor recreational facilities include a softball field, a sand-volleyball court, three swimming pools, and a multipurpose intramural field. The park area at Compton and Laclede features a gazebo, walking path, and a lake for the enjoyment of the SLU community.

The new Medical Center Stadium, completed in 2011, is the on-campus home of SLU's Division I track and field team. An eight-lane, 400-meter track rings an NCAA-regulation soccer field, providing additional space for organized intramural and club sports activities as well as a place for faculty, staff and students to conveniently exercise.

In addition to club sports and intramural programs, fitness/wellness programs, and aerobics classes, informal, drop-in opportunities are offered at the Simon Recreational Center on a year-round basis. All currently enrolled students are automatically members.

In Madrid, the Office of Student Life offers students fitness and recreational activities, from American football to scuba diving, including club sports, in which students are integrated into Madrid's community athletic leagues.

## Dining Services

Saint Louis University contracts with Chartwells to provide University dining services to the staff, faculty, and students on the Frost and Health Sciences Campuses. Bannister House, located at 3824 Lindell, also provides breakfast, lunch, and catered meetings to faculty, staff, and alumni. The Frost Campus offers seven dining locations, and the Health Sciences Campus provides two locations. A variety of options from Chinese fare to Italian pizzas and pastas are offered. Fresh Gatherings, located in the Doisy College of Health Sciences building on the Health Sciences Campus, is run by the Department of Nutrition and Dietetics and offers locally grown, sustainable fare at a reasonable cost. Residence Dining Centers, located in [Griesedieck](#), [DeMattias](#), and [Reinert Halls](#), feature an all-you-care-to-eat format.

[University Dining Services](#) offers a wide variety of flexible

meal plans as an easy and convenient way to enjoy dining on campus. After purchasing a Meal Plan, the meal card may be used at any one of the three all-you-care-to-eat residence dining locations and in the flex-dollars portion at any campus dining facility. The Commuter Plan is designed specifically for the non-traditional commuter student who wants the convenience of an on-campus meal-plan.

In Madrid, the Campus Cafeteria, located in Loyola Hall, offers buffet meals and snacks on a cash-only basis.

## Billiken Bucks

Billiken Bucks is a debit account program that allows students and employees to deposit money on account with [Parking and Card Services](#). When purchases are made at campus dining facilities, coffee shops, convenience store, the bookstore and libraries, the SLU ID card is swiped, and the amount of the purchase is deducted from the account.

## Athletics

Saint Louis University is a member of the National Collegiate Athletic Association (NCAA Division 1) and of Mid Atlantic 10. Presentation of a valid SLU identification card at the gate or door of a "home" athletic event by a student entitles that student to attend that event free of charge on a first-come, first-served basis with one exception: men's basketball.

Since March of 2008, the [Chaifetz Arena](#) has been home to the Basketball and Volleyball Billikens. This facility has a seating capacity of 10,600, 12 private suites, hospitality areas, merchandise outlets, training facilities, sports medicine facilities, and athletic offices. The Chaifetz Arena provides the [Billikens](#) a true home-court advantage and enriches the University and campus life.

Both the men's and women's soccer teams play their intercollegiate games on campus at the Robert R. Hermann Stadium with a seating capacity of 6,050. Facilities include a concession stand, locker rooms, press facilities and a rooftop area for press cameras and videotaping.

Near the soccer stadium lies the Billiken Sports Center, home to the baseball and softball Billikens with an updated baseball field and state-of-the-art softball diamond.

## Parking and Inter-Campus Travel

[Parking facilities](#) are provided at both campuses for a fee. The Billiken Bus Line provides transportation within and between the Frost and Health Sciences Campuses while classes are in session. Vans and buses are available for private charter to student and faculty organizations.

The Madrid Campus organizes discounted group flights to and from Madrid at the start and end of each semester,



respectively, to accommodate visiting students and faculty.

## GRADUATE EDUCATION CONTACTS

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# Admission Policies and Procedures

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## Categories of Graduate Students

**Classified** students have been admitted and matriculated through their particular School/College/Center to pursue advanced degrees and are advised by academic departments or their equivalents.

**Unclassified** students are not formally pursuing degrees or certificates. Such students may be completing prerequisites for subsequent degree pursuit or simply taking coursework for enrichment. The former group may be eligible for some categories of financial assistance available through the University, but the latter is not. Ordinarily, a student may not remain in Unclassified status and be eligible for financial aid for more than two academic terms.

**Probationary** students are applicants for Classified admission who are temporarily assigned to this status because of deficits in their academic backgrounds. Tenure in Probationary status may not exceed twelve credit hours or one calendar year. Once the student has advanced to Classified status, s/he may petition that coursework completed while in Probationary status, exclusive of eliminating any prerequisite deficiencies, may be accepted toward partial fulfillment of degree requirements.

**Conditional Classified** students are informally admitted, which permits them to initiate coursework prior to full approval of Classified status. A student is termed Conditional often because a required document which would complete the Classified application is missing, such as an updated transcript showing the conferral of a degree. Ordinarily, a student may remain in Conditional status for only one academic term, but the coursework completed during that term may subsequently apply toward a graduate degree.

**Certificate** students have been admitted and matriculated to pursue advanced degrees and are concurrently seeking certificates or have been admitted and matriculated directly into certificate programs without seeking a degree. The student and the major field must understand that, although some completed, advanced, academic work will partially fulfill requirements for both certificate and degree, and some elective credits within the degree program may be assigned to the certificate, full completion of both sets of requirements may total credit hours in an amount greater than that required to earn the degree alone.

**Auditors** are students admitted into Unclassified status in a Graduate Program and who enroll in coursework but not for academic credit at the Frost or Health Sciences Campuses. They are formally registered with the Registrar's Office in order to be recognized on their transcripts. They are expected to attend classes regularly, but are not responsible for

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## General Policies

Graduate students must become familiar with the regulations of those of the chosen major department or program (and, if applicable, the minor field as well). Each student must accept responsibility for compliance with these regulations and for the consequences associated with noncompliance.

The mere literal fulfillment of coursework requirements does not automatically guarantee advancement to candidate status in a particular graduate program.

The University reserves the right to modify policies at any time to conform to professional changes in practice.

## Organization and Governance

The Associate Vice President for Graduate Education coordinates university-wide graduate activities, including candidacy and graduation. Finally, a Graduate Academic Affairs Committee (GAAC) is concerned with the development, improvement, and quality control of graduate education at Saint Louis University. Deans and Directors are responsible for the graduate programs that fall under their particular School/College/Center. In most units, an Associate Dean for Graduate Education is charged with overseeing the day-to-day operations of their respective graduate programs.

## Major Fields, Areas of Concentration, Degrees Certificates

A complete listing of degree and certificate programs can be found [here](#).

assignments or examinations. Tuition to audit a course is \$50 per credit hour. Email, library, and other privileges associated with classified student status are granted to auditors. It is the decision of the Schools/Colleges/Centers whether it is appropriate to permit their classified students to audit classes. In any case, students are permitted to audit a maximum of one course per semester, with a two-course audit limit within a degree program.

**Visitors** are students temporarily admitted for the Summer Sessions at the Frost or Health Sciences Campuses. They must secure department or program permission for entry into desired courses. Visitors are not required to formally apply, but they must be admitted by the Dean or Director of their particular School/College/Center, then register, and a permanent record is created for them. SLU's graduate alumni are permitted to audit courses within five years of their graduation date. Visitors who audit classes are assessed tuition at \$50 per credit hour.

**Faculty** of Saint Louis University may be admitted and register as Unclassified graduate school students. Faculty holding the rank of Assistant Professor or higher, except librarians with equivalent rank, ordinarily will not be granted Classified status toward pursuit of advanced degrees. Requests for exception to this regulation must be initiated with the Associate Dean for Graduate Education of the particular School/College/Center or other designee.

## Admission Policies

A viable applicant must possess, minimally, a baccalaureate degree or the equivalent from an accredited, recognized college or university at the time of matriculation as a graduate student. The prerequisite expected by the major graduate field is the equivalent of an undergraduate area of concentration as understood at Saint Louis University: a sequence of eighteen or more semester-hours of upper-division (advanced undergraduate) courses. In graduate major fields where no corresponding undergraduate major exists, the prerequisite requirement may be expressed in an alternative manner.

### **Three-Year Degrees**

Decisions regarding acceptance into a graduate degree program will not be made on the basis of the length of the degree program the student has completed, but rather on the applicant's preparation to pursue graduate work in the discipline.

### **International Applicants**

Ordinarily, international applicants may not be admitted to Unclassified status. Documents are required of them that present evidence of visa eligibility and certification of financial support for the full period of graduate study. The Office of International Services provides assistance for international applicants (cf. above).

International applicants must submit a [TOEFL](#) or [IELTS](#) score when applying. Exemptions are: English is the official language of the applicant's country; the student attended a US university for four semesters; other cases that warrant exemption determined by the admitting department.

Saint Louis University recommends a minimum paper-based TOEFL (PBT) score of 550, an 80 on the computer-based TOEFL (iBT), a 6.5 on the IELTS, and a 4+ on SLU's own SLUWE (Saint Louis University Writing Evaluation). The latter test is administered by ESL once the international student has arrived on campus. Individual graduate programs may decide to set higher minimums based on the level of English proficiency needed for their respective course of studies.

This policy emphasizes that the scores listed above indicate a level of English that does not necessarily guarantee that the international applicant will have a command of spoken and written English, an ability to read the language and to take notes in it such that s/he will be on equal terms with native speakers of English. It is thus very important that the international student follow the recommendations by ESL for improving her/his English based on the TOEFL/IELTS test score, the SLUWE score and the English proficiency needed by the particular graduate program. It is the student's responsibility to do so. These recommendations may range from exemption from any ESL courses, to concurrent enrollment in ESL and the graduate program, or full-time enrollment in ESL with no registration in graduate-level work until the desired level of English has been achieved. For questions about international applications contact: <http://www.slu.edu/x32288.xml>

### **Re-application**

An accepted Classified applicant must register for graduate degree work at Saint Louis University within two calendar years (less in some fields) of the original acceptance. If a Classified student has registered at least once for coursework, and if more than three years have elapsed since the last registration, the student will be required to re-apply for admission. The fee for re-application is one-half of the initial application fee.

### **Health Insurance**

Saint Louis University requires full-time Undergraduate and Graduate/Professional students to have basic health insurance. Unless you waive health insurance via the [Health Insurance Waiver Form](#), you will be charged for coverage, for all semesters and/or terms in which you are registered, under the [University Health Plan \(UHP\)](#) health insurance plan sponsored by Saint Louis University. Participating students must complete the [University Health Plan Enrollment Application Form](#). Summer coverage is not required.

### ***Immunization Policy***

All Classified graduate students must comply with the University's immunization policy. All incoming students must complete and submit the SLU Student Immunization Record form, which is located on the [Graduate Admission Website](#).

## **Admission Procedures**

The application process is handled on-line. <http://www.slu.edu/x32020.xml>

The following application documents are required:

1. Application form with accompanying application fee
2. Official transcripts from all colleges and universities attended
3. Graduate Record Examination (GRE) if required by the program to which the student is applying (cf. [http://www.slu.edu/graduate/admission\\_requirements.html](http://www.slu.edu/graduate/admission_requirements.html)). If the GRE score is required, students must have an official score submitted (with their application) by Educational Testing Service (ETS). Certain programs also accept: MAT, MCAT, or LSAT.
4. Three letters of recommendation (preferably from recent instructors)
5. Resumé or Curriculum Vitae (C.V.)
6. Professional goals statement
7. Possibly other specific documents, as required by the major field

If Classified or Certificate status is sought, the desired major field or program must be indicated. An area of concentration or specialization may be requested. A formal minor may be proposed, but is not required of Classified applicants. Available minor fields generally include all fields in which a graduate degree is offered.

The completed Classified or Certificate application form with the application fee must be submitted before the deadline set by the department or program. If an earlier date is not specified, the general deadlines are as follows: Summer: April 1; Fall: July 1; Spring: November 1.

Each application for Classified status is evaluated initially by an admissions committee in the proposed major field (and, if applicable, subsequently in the proposed minor field). The Associate Dean for Graduate Education or other designee of the particular school/college/center receives the recommendation(s) of the committee(s) and is responsible for making the final decision and communicating it to the proposed major field and applicant.

#### **NOTE:**

Academic records, in English translation, of students who have undertaken postsecondary studies outside the United States must include the courses taken and/or lectures attended,

hours of practical laboratory work, the maximum and minimum grades attainable, the grades earned or the results of all end-of-term examinations, and any honors or degrees received. WES and ECE transcripts are accepted as well.

Applicants whose coursework is exclusively confined to Summer Sessions may seek admission only to specific non-research Master's degree programs.

A post-baccalaureate student may pursue only one advanced degree at a time, except if admitted to one of several, specific, dual-degree programs. An applicant desiring to undertake a dual-degree program must separately apply, and gain admission, to both advanced degree programs.

## **Matriculation Policies**

The matriculated Classified graduate student must maintain continuous enrollment during each nine-month academic year until graduation. The academic department (major field) determines whether or not graduate students must also enroll each summer. Alternatively, students in summers-only programs must register every summer until degree requirements are fully completed. The student violating the mandatory continuous-enrollment policy must pay a fee/penalty determined by the number of consecutive semesters not enrolled. If a student does not enroll for a period of three years or longer, a new application for admission will be required along with a \$20 application fee.

Classified graduate students are expected to meet with their advisors at least once each semester. Students must have their advisor's permission to enroll in new academic work in anticipation of a new academic term.

Students may register for zero credit-hour courses. Details regarding these enrollments can be found in the zero-credit registration section of this catalog. Such a registration gives the student access to University libraries, computer centers, and other resources.

A Classified graduate student may formalize an interruption in progress towards a degree by petitioning the major-field chairperson and the Associate Dean for Graduate Education or other designee of the particular school/college/center for a leave of absence. A leave period is generally for one calendar year.

Students on approved leave of absence do not violate the mandatory continuous enrollment policy during the leave period. However, three years or more with no academic progress results in automatic expulsion from the degree program. Students on approved leave do not have access to University resources.

A Classified student may petition to change the degree sought, concentration, or to add or delete a formal minor. The Petition to Amend the Graduate Program is the proper document for such a request. Note that a new classified application is generally required to change major fields. A student may also petition to continue doctoral study immediately upon

completion of a Master's degree in the same major field. The Petition for Admission into a Doctoral Degree Program is required in this instance. Petitions are made to the college, school, or center.

All petition forms are available on-line at [http://www.slu.edu/graduate/students\\_forms.html](http://www.slu.edu/graduate/students_forms.html).

## Transfer of Credit

The Classified student is expected to complete most degree requirements at SLU, but some advanced work taken elsewhere may be "transferred," subject to specific university, college, school, or center restrictions. The student must initiate a petition and have an official transcript of the work proposed for transfer forwarded to the college/school/center. The advisor and major field makes a recommendation on the petition form, and the final decision rests with the Associate Dean for Graduate Education or designee of the particular school/college/center. Such a petition will not receive consideration until the student has completed a minimum of six semester hours toward the degree at SLU.

Ordinarily, work completed elsewhere more than five years prior to the beginning of the current SLU degree program will not be approved for transfer into the current program. For a course to qualify for transfer, the course must be applicable for inclusion in the advanced degree program and in the present major field of the student at the accredited institution where it was taken. The grade received must have been B (3.0 on a 4.0 scale) or higher. (Courses taken on a Credit/No Credit or Pass/Fail basis ordinarily will not be considered for transfer.) A conditional approval of transfer of credit may be obtained by the Associate Dean for Graduate Education or designee of the particular school/college/center prior to the student's enrollment in the course(s) in question, but the petitioning process after completion of the coursework must still be undertaken. Final approvals of transfer of credit are documented by the University Registrar in the student's permanent records at the University.

The Master's degree student must complete a minimum of 80% of the advanced work at SLU. For example, within a 30 credit-hour Master's program, a maximum of six semester hours of work (20%) may be approved for transfer toward fulfillment of degree requirements. Work that was part of a Master's degree program completed elsewhere will not be approved for transfer, i.e., the same course may not be "double counted" in two separate Master's degree programs. Similarly, a graduate course taken in partial fulfillment of undergraduate degree requirements may not also be included in a graduate degree program unless specified otherwise by a school, college, center, or program.

The Ph.D. degree student must also complete a minimum of 80% or, if matriculating as a post-Master's student, at least 24 credit-hours of post-baccalaureate work at SLU in preparation

for and in anticipation of preliminary degree examinations. The Ed.D. degree student must complete at least 38 semester hours of credit at SLU. Students admitted for doctoral study, having previously completed a Master's degree in the same or a comparable major field, may expect at least a portion of that prior work to be recognized as contributing to the overall advanced preparation for the doctorate, giving the student Advanced Standing.

## Academic Calendars

The University operates within a fiscal calendar that begins on [July 1 and ends on June 30](#). Most Colleges/Schools of the University follow an academic calendar that includes two semesters and a set of summer sessions. The "year" begins with the Summer Sessions and ends with University Commencement at the close of the Spring Semester. The graduate calendar consists of the Summer Sessions, which run from late May to mid-August, a Fall Semester beginning in late August and concluding in mid-December, and a Spring Semester that starts in January and closes in mid-May. The School of Medicine follows a three-terms-per-year calendar.

## TUITION AND FEES

[Tuition and fees](#) are subject to change. The rates for the Fall and Spring semesters of the 2010 academic year are as follows:

Click [here](#) for a comprehensive list of current (2011/12) tuition rates.

### Academic Fees

With Classified application	\$40 (nonrefundable)
With Unclassified application	\$10 (nonrefundable)
For late registration	\$50
Mandatory-continuous-enrollment violation	\$100 per semester
Graduation Fee	\$75
For confirmation of enrollment (Madrid Campus only)	€200

### Admission Deposit

All incoming residents/graduate students in the Center for Advanced Dental Education programs are required to make a deposit of \$1,000, applicable toward tuition for the first one-half year, to hold places in the classes.

## Payment of Tuition and Fees

Payment of tuition, fees, and deposits (not covered by financial aid awards) must be made after pre-registration for classes. Initial billing statements are mailed to the student's permanent address by the [Office of Student Financial Services](#). Subsequent billing statements will be mailed to the student's local address, or, if specified, the permanent billing address.

Students have the option of paying the balance in full or participating in a payment plan (see below). Payments must be received before the due date. (Post-marked dates are not applicable.) Payments are best made in person to the Office of Student Financial Services (DuBourg Hall, Room 121) and must be accompanied by the top portion of the bill. Make all checks payable to Saint Louis University; the student's Banner number must appear on the face of the check. Credit card payments may be made with a convenience fee if the student is paying for the fall or spring term in full. Failure to make financial arrangements by the specified payment deadline will result in the registration being canceled. If the registration is canceled, no scholarships or financial aid can be paid to the student's account. In addition, a \$50 fee will be charged to the student's account if reregistering during the late registration period.

For the schedule of Madrid Campus tuition, fees, payment and refund information, see [http://spain.slu.edu/admissions/tuition\\_and\\_fees.html](http://spain.slu.edu/admissions/tuition_and_fees.html).

### SLU Budget Plan (Fall and Spring)

The Budget Plan allows semester charges to be paid in four monthly installments each Fall and Spring Semester with a 1% per month finance charge. A minimum of 25% of the total tuition, fees, and room/board charges is due prior to the start of classes. The balance including the finance charge is payable in three equal installments due October 1, November 1, and December 1 in the Fall term, or March 1, April 1, and May 1 in the Spring term. The account must be paid in full before the next academic term.

### TMS 12 Payment Annual Plan

Annual interest-free monthly payment plans are provided by Tuition Management Systems (TMS) with a full range of payment methods (check, on-line credit or debit card, on-line deduction from checking or savings account, and Western Union Phone Pay), and they include education life insurance at no additional charge. Advance enrollment is necessary, and the non-refundable enrollment fee (\$90 or \$120 for the 12 or 10-month plans, respectively) must be paid to TMS. The first interest-free payment is due May 1 or July 1, with subsequent payments due the first of every month. Contact TMS at [www.afford.com](http://www.afford.com) or toll free at 1 (800) 343.0911.

### SLU Budget Plan (Summer)

Financial arrangements for Summer Sessions are due on the published deadline in May for any enrollment combination except for exclusive Six-Week II courses. The required payment is 50% of total charges. Payment of the balance plus a \$10 service charge is due July 1. Students enrolled exclusively in Six-Week II courses have a different published deadline in June. Payment of the balance plus a \$10 service charge is due August 1.

### Employer Billing

Students whose employers pay tuition may use the Company Billing process. Contact the [Office of Student Financial Services](#) for information about procedures. If an employer reimburses students based on successful completion of coursework, the student is responsible for tuition payment at the time of registration.

### Student Financial Responsibility

No student is officially registered until payment or a satisfactory arrangement for payment has been made. All indebtedness to the University must be cleared promptly. Student account balances that are past due result in electronic "holds" that block future registrations and deny the issuance of official transcripts. No refund or reduction is allowed for absences.

## Withdrawals

Students are responsible for formal withdrawal from individual courses or other registrations. See "Withdrawing from a Course, Term Work, or the University" for regulations governing withdrawal.

### Refunds: Fall and Spring Semesters

Time of withdrawal as approved by the Dean of the particular School/College/Center	Percentage of Tuition Refunded
First Week of Classes	100%
Second Week of Classes	100%
Third Week of Classes	90%
Fourth Week of Classes	80%
Fifth Week of Classes	70%
After Fifth Week of Classes	0%

For withdrawal/refund policies for the following programs, please contact the following:

School of Medicine: (314)977-9840,  
<http://medschool.slu.edu/sfs/>

School For Professional Studies: (314)977-2330,  
<http://www.slu.edu/x11121.xml>

If a student and/or the student's parent is receiving federal financial aid for the term of enrollment, a pro-rata refund schedule applies. Consult the Office of Student Financial Services for information.

Fees are not refunded in the case of withdrawal for any reason. Residence Hall charges will be refunded in accordance with the residence contract.

The refund schedule for the Summer Sessions is published in the Summer Sessions Schedule of Classes.

## FINANCIAL AID

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To learn about financial aid, visit Student Financial Services at: <http://www.slu.edu/x21861.xml>

## Fellowships, Assistantships, and Scholarships

Saint Louis University's [fellowship, assistantship, and scholarship programs](#) are made possible through University resources, grants, individual donors, corporations, foundations, and alumni. These awards are made on the basis of academic excellence.

### Graduate Assistantships

Saint Louis University in St. Louis offers three categories of graduate assistantships. The assistantships offered include a range of stipends depending upon the degree level, the field of study, and the length of the appointment. These awards typically include tuition scholarships of nine credit hours per semester during the nine-month academic year. Recipients also generally receive health insurance. Assistants spend at least 15, but no more than 20 hours per week performing assigned duties. All Assistants must be Classified graduate students and remain in good standing. Assistants are expected to maintain a cumulative grade-point average of 3.0 during the academic year of appointment. If the student's GPA falls below a 3.0 during any portion of the academic year, the student can be terminated by the department from the assistantship during that academic year.

### Assistantship Extensions

Normally, the maximum number of years that a graduate student may hold an assistantship is two years while pursuing a Master's degree and five years in a Doctoral program. In the case of a student pursuing the Master's and Doctoral degree in the same major field, eligibility for funding is also normally limited to five years. A third year of funding for the Master's (thesis option only) or a sixth year for the Doctoral degree is possible provided funding through the department in question is available and the criteria established by the respective school/college are met. The appeal should be made during the spring semester of the second year of funding for the Master's or of the fifth year for the Doctorate to the Associate Dean for Graduate Education or the equivalent administrator of the particular school/college. No additional funding will be provided to implement.

A [Graduate Teaching Assistant](#) may work with students in small groups, lead class discussions, monitor examinations and grade papers, help prepare lectures, conduct laboratory sessions, or even be responsible for a course as the primary instructor. Under the close supervision of the Faculty, teaching assistants concurrently develop teaching skills and a deeper understanding of the discipline.

A [Graduate Research Assistant](#) may be funded by the University or by an externally funded research project. In either case, the student is assigned a range of duties such as library searches, field work, laboratory experiments, and preparation of grant applications and proposals so as to gain professional skills in research which complement graduate education.

A [Graduate Assistant](#) performs other duties that are not primarily teaching or research. These duties may include clinical, advising, or administrative responsibilities that are inherently related to the student's educational and career objectives.

### Madrid Campus Assistantships

Madrid Campus graduate assistantships take the form of tuition discounts only. These assistantships enable students to gain experience in areas of professional responsibility related to their field of study.

### Presidential Fellowships

These [fellowships](#) include a stipend for an eleven-month appointment as well as 21 credit hours of tuition scholarship and health insurance.

### Dissertation Fellowships

[Dissertation Fellowships](#) are awarded in annual competitions to selected Candidates for the Ph.D. Each nine-month, academic-year fellowship award includes a stipend, twelve semester hours of tuition remission, and health insurance.

### Tuition Scholarships

Many programs have a limited number of [tuition scholarships](#) available for students. These scholarships are frequently reserved for students with serious financial need.

### Health Sciences Graduate Fellowships

Awards made in the medical sciences include stipends and tuition scholarships. These appointments are usually made for one year, but satisfactory progress toward the degree may lead to reappointment.

### External Fellowships

Individual departments or programs may receive funding from sources [external to the University](#) that includes support of graduate students. From such grants, students may be appointed to fellowships or traineeships consisting of stipends and full tuition scholarships with the academic approval of the Dean or Director of the particular school/college/center. Trainees will be required to participate in training experiences as demanded by the grantor.

### Diversity Fellowships

[The Diversity Fellowship](#) is designed to assist in achieving a more diverse population of graduate students. This initiative is consistent with SLU's Mission Statement and with its commitment to making graduate education more accessible to an inclusive variety of applicants. The Diversity Fellowship is awarded to a newly accepted Master's or doctoral student who has demonstrated outstanding scholastic achievement and potential for success in a graduate program. These fellowships include a stipend for an eleven-month appointment as well as 21 credit hours of tuition scholarship and health insurance.

### Private Sources

Other fellowships are available from various agencies, professional organizations, foundations and corporations. Most of these awards may be taken by the student to the institution where admission is granted. Listings of such awards may be found in a variety of reference materials published by, for example, the Superintendent of Documents, the National Science Foundation, the Department of Education, and the Council of Graduate Schools in Washington, DC, the National Institutes of Health in Bethesda, MD, and Peterson's Guides in Princeton, NJ.

### Graduate Student Loans

[The Office of Student Financial Services](#) administers federal and alternative bank-funded loan programs. Such programs are a cost-effective way to finance educational and living expenses. Most of these loans have low interest rates, and all defer repayment until after the completion of the student's graduate program of study. The Office of Student Financial Services encourages early application to better ensure funds availability for the academic terms for which the financial assistance is sought.

## Short-Term Loan Fund

The USX Foundation has provided a loan fund to particularly help students meet expenses at the beginning of an academic term, for travel to scholarly meetings, or to provide assistance in emergencies. The maximum amount to be borrowed is \$1,200, and, if repaid in 90 days, the loan is interest free. These funds are available on a first-come, first-served basis to Classified students who are U.S. citizens and in academic good standing. Ordinarily, these loans will be granted a maximum of three times provided the previous ones have been repaid. Students may contact Student Financial Services to discuss their options.

## REGISTRATION

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### Pre/Continuing/Late Registration

[Pre-registration](#) periods for courses and other academic work for the Summer Sessions and the Fall and Spring Semesters are scheduled by the Office of the Registrar. At the end of those periods, the Office of Student Financial Services mails billing statements to pre-registered students, and they must respond to the statements to confirm their registration.

A period of Continuing Registration follows the Pre-registration period. Students enrolling during this period and thereafter are expected to complete the entire process, including the making of financial arrangements with the Office of Student Financial Services. A "late-registration fee" may be charged to the student enrolling during the Late Registration period.

Course registration made during the pre-registration period will be canceled if there is a balance due and no response to the billing statement. Similarly, registrations initiated during the Continuing or Late Registration periods will be canceled if financial arrangements are not made.

### Changes in Registrations

No fee is assessed for a [change in registration](#). Generally, academic work may not be added to or substituted within the graduate student's program for the term or session subsequent to the second full week of classes for the semester. More stringent time-lines exist during the Summer Sessions. Ordinarily, withdrawals from academic work may not occur after mid-term.



## Registration “Holds”

The University may block the registration of a matriculated student by placing an [academic “hold”](#) on the student's record for one of several reasons (e.g. non-payment of tuition, library books not returned, violation of the mandatory continuous-enrollment requirement). The Student Health Service will also place registration “holds” in cases of violations of the immunization/health-history policy.

## Zero-Credit Registrations

A Classified graduate student may include in the program for the academic term one or more zero credit-hour registrations. Often a journal club or colloquia registration, and in some instances practicum or internship enrollments, may be for zero credit. The student may be preparing for language or degree-examination(s), or may have taken the required total number of credits of Thesis or Dissertation Research within the ordinary time period to complete all degree requirements. The student may be completing the requirements for coursework that was initiated during a previous academic term. Zero-credit registrations, coded by 5CR and 6CR or 595 and 695, are each permitted no more than twice during a degree program.

Any registration, even if for zero credit hours, enables the student to have access to the academic resources of the University. In no instance, however, should a student's record show a “5CR” or “6CR” registration during the degree examination or research phase of the academic program.

## Research-Phase Registrations

Toward completion of requirements for a research degree, a Master's level student must enroll in a minimum of six credit hours of Thesis Research. Accumulation of these credits may begin after the student has completed the equivalent of one full-time semester of coursework at SLU. The student pursuing the Ph.D. degree must accumulate a minimum of 12 credit hours of Dissertation Research, and an Ed.D. student three credit hours of Project Guidance. Students are encouraged to distribute research registrations over several academic terms, taking numbers of hours per term commensurate with the anticipated intensity of research involvement.

A registration of three research credit hours by itself is considered a full-time enrollment for a semester. Ordinarily, the minimum research registration for an academic term is one semester hour. Zero credit-hour registrations in Thesis or Dissertation Research are possible after the required credits have been accumulated (within the ordinary or extended time-to-degree period). By themselves, such enrollments make the registrants at least half-time students.

If a student's degree program becomes protracted such that extensions of the ordinary time-to-degree period are necessary, approvals of such extensions of research-degree

programs are ordinarily accompanied by the requirements of enrollment in additional research credits (or additional Project Guidance credits for students pursuing Ed.D. degrees).

## Inter-University Registrations

Through mutual agreements with specific local academic institutions, including Washington University, University of Missouri-St. Louis, and several other institutions offering post-baccalaureate work, students may be permitted to enroll in courses offered at these locations for “in-residence” credit. The course must be 500- or 600-level or the equivalent at the “visited” institution and generally be in the student's major field. The student must be Classified and full-time for the academic term. Ordinarily, a maximum of the equivalent of one three-credit course may be taken at the “visited” institution per academic term, and not more than six semester hours per degree program. A special, [inter-university registration](#) form, available from the University Registrar, must be completed for each such enrollment.

Through special arrangements with the University, Aquinas Institute's (AI) graduate courses are directly accessible to graduate students. Enrollments by students in AI coursework should be limited, the transfer-of-credit guidelines apply, and such registrations are to be monitored by the major fields.

## Audits, Auditors, and Visitors

Auditing a course as a Classified student must be approved by the academic unit offering the course. The tuition charge for auditing is \$50 per credit hour. At the end of the academic term, the course instructor determines if the student has satisfactorily completed the audit. If so, the designation “AU” is placed by the Registrar in the grade field for the course on the student's permanent record and, if not, a “W” is placed. No credit toward a degree is earned in an audited course. A change in status of a course from “credit” to “audit” may not be made after the mid-term. A change in course status from “audit” to “credit” will not be approved after the second week of the semester.

An *Auditor* is an individual who enrolls for the academic term only to audit coursework. There is a \$50 charge per credit hour for Auditors.

The *Visitor* is a student taking coursework only for enrichment or for potential transfer of SLU credits into a degree program at another academic institution. The Visitor is admitted to the University only for the academic term, and is evaluated for eligibility for registrations in individual courses by the academic units offering those courses. Categorically, Visitor status exists only for the Summer Sessions. The Visitor desiring to take graduate-level academic work should be admitted by Graduate Education Admissions. No fee is charged for such an admission.

## Registrations of Undergraduates in Graduate Coursework

SLU undergraduate, degree-seeking students may be permitted to enroll in 500 or 600-level coursework provided that specific conditions are met. First, the student must hold senior standing and have the majority of the major requirements already fulfilled. Second, prerequisites for each course in question must have been completed. Third, the student's cumulative GPA must be minimally 2.7 on a 4-point scale. Fourth, the total enrollment for the semester (or summer sessions) may not exceed 15 (six) credit hours with not more than six (three) credits in 500 or 600-level work. To be granted permission to take graduate coursework, the undergraduate must complete a formal petitioning process during which approvals of the course instructor, the student's major advisor, the undergraduate Dean, and the Associate Dean for Graduate Education or designee of the particular school/college/center are obtained.

As part of the petitioning process, the student must indicate that the graduate coursework is to be taken either to partially fulfill requirements for the baccalaureate degree or for "advanced graduate credit." In the latter case, all major requirements must have been fulfilled. Approval to take and successful completion of the coursework do not, of themselves, guarantee the student admission into the applicable advanced degree program or, in any way, amend the ordinary process of making application for Classified status.

## Withdrawing from a Course, Term Work, or the University

[Withdrawal](#) from an individual course or from the entire program of studies for an academic term must be undertaken formally by the student and through the completion of a Change-of-Registration form available from the University Registrar. Formalization of a withdrawal may entitle the student to a partial refund of tuition paid. Separate policies exist for students developing substantial physical or mental health problems or who are called to active U.S. military duty during the academic term. Those policy statements are available from the University Registrar.

Depending upon the reason for or the date of withdrawal, the registration(s) in question may be erased from the student's permanent record or a withdrawal indicator ("W") may be placed in the grade field(s) in the SLU record. Ordinarily, withdrawals are not permitted after mid-term.

In addition to filing the Registrar's form, a student on an assistantship appointment must submit a letter of resignation through the academic unit to which service is rendered to the Associate Dean for Graduate Education or designee of the particular school/college/center. A Classified student

withdrawing entirely (or taking a formal leave of absence) from a graduate program is required to submit a letter of resignation (or a petition for a leave), routing the letter or petition through the major field and to the Associate Dean for Graduate Education or designee of the particular school/college/center.

## ACADEMIC STANDARDS

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### Academic Work at the 400, 500, 600 and 700 Levels

Academic work designated by 500, 600 or 700 level is, by definition, offered for "graduate credit." To the extent applicable, students may obtain credit toward degrees for limited numbers of credit hours in 400-level (upper-division, undergraduate) courses. Limitations are given in the subsequent section on "Graduation Requirements."

### Grading System

The Grading Scale exclusive of Thesis or Dissertation Research is as follows:

Undergraduates, Health Science Professional, and Masters in Social Work - **Fall 2005 - Present**, Graduate and Other Professional - **Summer 2011 - Present**

A	4	
A-	3.7	
B+	3.3	
B	3	
B-	2.7	
C+	2.3	
C	2	
C-	1.7	
D	1	
F	0	
AF	0	Failure due to excessive absence

School of Law - **Fall 1994 - Present**

A+	4
A	4
A-	3.7
B+	3.3
B	3
B-	2.7

C+	2.3	
C	2	
C-	1.7	Fall 2007 - Present
D	1	
F	0	

For most graduate level offerings carrying zero or one semester hour of credit, one of these two final grades is assigned:

“S”	Satisfactory
“U”	Unsatisfactory

Neither of these two grades influences the student’s term or cumulative GPA. (“Pass/No Pass” grading is not permitted.)

For Thesis and Dissertation Research registrations, Project Guidance, and for Special Study for Examinations, one of these three grades is assigned at the end of the academic term:

“IP”	In Progress
“S”	Satisfactory
“U”	Unsatisfactory

Toward fulfillment of the credit hours required for Thesis or Dissertation Research or Project Guidance, the grade of “S” may be assigned only once: at the close of the final academic term at SLU during which the student has completed both the hours requirement and the thesis/dissertation/project itself. At the close of a prior term, if progress has been made, the “IP” grade is appropriate. When a “U” grade is assigned, no credit toward fulfillment of the hours requirement is earned. Adjacent to a Special-Study-for-Examinations entry in the student record, “IP,” “S,” and “U” indicate that the exam was not taken, was passed, and was failed, respectively. None of these three grades affects the student’s term or cumulative GPA.

At the end of a term for a course at any level that a student audits, the instructor assigns one of these two grades:

“AU”	Audit (satisfactory)
“W”	Authorized withdrawal (or unsatisfactory audit)

Neither of these entries into the permanent record influences the student’s term or cumulative GPA, or counts toward credit hours earned for degree.

Withdrawal from a class between the end of the Late Registration period and mid-term, a designation of “W” is entered into the grade field for that entry in the permanent record. Withdrawals beyond the mid-term date are ordinarily not allowed.

The following temporary course grades may be given:

“I”

All requirements for the course have not been completed by the student by the close of an academic term. The “Incomplete” may remain in the permanent record for a maximum of 12 months and, if not amended by then, is transformed into an “F” (Failure).

“X”

Student is absent from the final examination. This grade must be rectified within six weeks of the end of the academic term, or it is replaced by the “F” grade.

“NR”

Student is enrolled in academic work for a term and may not be expected to complete requirements by the close of that term. The notation “NR” means “Not Recorded” and remains in place until the instructor of record communicates a final letter grade to the Registrar.

## Grade Reports

An electronic grade report is prepared for the student at the end of the academic term for which the student has completed a registration. The report is communicated to the student via Banner. In addition to grades for each end of a course, the report shows cumulative quality data for the term and for all graduate work taken to date. Graduate students do not receive mid-term grades. When an initially assigned temporary grade or an “NR” indicator is rectified to a permanent grade, the change appears in Banner.

## The SLU Permanent Record

The permanent record at the University shows the courses taken and the grades received by the student. Also indicated are the previous degrees earned by the student and any academic work taken elsewhere that has been approved for transfer into a SLU degree program. A transcript is a copy of the permanent record, certified as authentic and true by the Registrar. If and when the student earns a degree and/or a certificate, that item is posted to the student’s SLU record. A final GPA is computed for the academic work taken in the University. If a graduate student takes a specific course twice, both entries will appear in the record, but only one will be included in the work presented toward a degree. The quality points from both entries will be included in the GPA.

## Good Academic Standing and Academic Probation

A Classified student is in good academic standing when s/he is making progress toward a degree within the time period established for that degree. A student is not in good standing when s/he is on academic probation. Students are also not in good standing if they have been formally dismissed from the University or placed under temporary suspension by action of

the Dean or Director of the particular school/college/center for academic deficiencies or academic misconduct. A student will not be advanced to candidacy or be eligible to graduate or continue an assistantship while not in good academic standing.

If the cumulative GPA of a Classified student falls below 3.0 (on the four-point scale, “B” = 3.0), that student is automatically placed on academic probation (not to be confused with Probationary admission). To continue degree pursuit, the student must progress toward a 3.0 cumulative average and is expected to emerge from academic probation within nine credit hours or two successive academic terms during which coursework registrations are recorded. A student will not be advanced to Candidate status while on academic probation. In general, doctoral students are expected to complete academic work at the “B+” level.

A limited number of credit hours in which the grade of “C” is earned may or may not be accepted toward a graduate degree at the discretion of the individual department or program. The Classified student’s cumulative GPA in academic work presented to fulfill degree requirements must be at least 3.0.

## Acceptable Academic Progress/ Ordinary Time Periods to Degree

The ordinary time period to degree for a Classified student begins at the start of the academic term when the first SLU course is taken to be included in the degree program. Accordingly, revision of the start of the time period is possible after matriculation if a course taken in Unclassified status is made part of the degree program through a successful petition to do so.

For the student pursuing a Master’s degree, the ordinary time period to the degree is five years, and seven for the doctorate directly from the baccalaureate. For the student pursuing the doctorate, having previously been awarded a Master’s degree in the same or a comparable major field, the ordinary time-period to degree is five years.

## Academic Integrity/ Ethical Behavior

The University is a community of learning, and its effectiveness requires an environment of mutual trust and integrity. As members of this community, students share with faculty and administrators the responsibility to maintain this environment. [Academic integrity](#) is violated by any dishonesty in submitting an assignment, test, research report, or any other documentation required to validate the student’s learning. In a case of clear indication of such dishonesty, the faculty member or administrator has the responsibility to apply sanctions to protect the environment of integrity.

Although not all forms of academic dishonesty are given here,

the instances listed below should be seen as actions that violate academic integrity:

- soliciting, receiving, or providing any unauthorized assistance in the completion of any work submitted;
- copying from another student;
- using electronic devices to share information during an exam;
- copying from a book or class notes during a closed-book exam;
- submitting materials authored by or editorially revised by another person but represented as the student’s own work;
- copying a passage or text directly from a published source without appropriately citing/recognizing that source;
- taking a test or doing an assignment or other academic work for another student;
- securing or supplying in advance a copy of an examination without the knowledge or consent of the instructor.
- Falsifying or fabricating research data.

Any clear violation of academic integrity will be met with sanctions. In a case of dishonesty within a course, the instructor may assign an appropriate grade and/or recommend further sanctions to the Dean or Director of the particular school/college/center, who is then responsible for the final decision and notification of all associated parties. The final decision of the Dean or Director may be appealed as described in “Procedures for Academic Appeals.”

Ethical behavior is also expected of students and faculty in the academic setting and extending into professional life. Sexual harassment will not be tolerated and will be sanctioned. Most major fields require their graduate students to complete an ethics requirement within the curriculum. Coursework or other training in ethical research is required of academic personnel involved in traineeship and investigative programs funded by a number of federal and other agencies.

[Click here](#) for SLU’s latest Codes of Student Conduct.

## Suspension/Dismissal

The student who is judged guilty of an act of serious [academic dishonesty](#) may be suspended for a specified time period or dismissed altogether. Suspension or dismissal may also be warranted for other reasons not listed above, e.g., unauthorized solicitation or distribution of controlled substances, endangering one’s self or another person, or abusing alcohol or illicit drugs. Reports of such actions may come from nonacademic staff, faculty, administrators, or other students.

Such reports are to be directed to the Dean or Director of the particular school/college/center, who is responsible for decisions to suspend or dismiss after completing the process outlined by the S/C/C.

## Procedures for Academic Appeals

As a general policy, if a student desires to appeal any academic decision that appeal should first be made to the faculty member or faculty committee involved and, if necessary thereafter, to the department or program chairperson, the Associate Dean or Director of the particular school/college/center, and the Dean, in that order. Should the student wish to pursue an additional level of appeals, the case is taken to the Associate Vice President for Graduate Education who reviews the file to determine if the process was followed. The Associate Vice President does not overturn a decision, but may send the case back to the school/college/center if process was not followed.

## Diversity, Affirmative Action, and Disabilities

All programs, work and activities at Saint Louis University are open to all without regard to race, color, sex, sexual orientation, age, religion, national origin, disability, or veteran status. All University policies and procedures are administered in a manner consistent with the University's Catholic, Jesuit identity. This policy applies to all students, faculty, and staff.

Contact may be made to [the Office of Diversity and Affirmative Action](#) for information on Saint Louis University's non-discrimination and equal opportunity policies. The office reviews complaints that allege violation of Saint Louis University's policies.

The Director of Diversity and Affirmative Action is also Saint Louis University's Section 504 Coordinator and is responsible for monitoring compliance with the Americans with Disabilities Act. Students may contact the offices in St. Louis or Madrid for assistance with physical, academic, and program accessibility.

# GRADUATION REQUIREMENTS

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## Master's Degrees

The general and minimum requirements for Master's degree study are explained below. For some Master's degree programs the requirements are more extensive and are given

and explained in the Curricula and Courses section of this catalog and in their program handbook.

### Courses

A minimum of 30 semester hours of academic work is required. For students pursuing the research option, six of the total credit hours to the degree must be in Thesis Research. The program of studies must form a united and coordinated whole, embracing a major field subject and, perhaps, a formal minor field.

In research-degree programs, no less than half of the total hours required (exclusive of Thesis Research) must be in the major field. All of the work must be of distinctly advanced character. The University will permit some 400-level undergraduate courses to be included in the degree program. However, the maximum allowable total semester hours of credit of such coursework is ten. Also, at least half of the work in the major field (again, exclusive of Thesis Research) must be strictly graduate (500, 600, or 700) level.

Non-research degree programs may be planned with somewhat greater flexibility. A minimum of 30% of the credits must be in the major field and half of the total program must be directly related to the major field. Again, no more than ten credits in total may be taken at the 400 level.

The minimum requirement for a formal minor at the Master's degree level is six semester hours at SLU. No more than three credits within the minor may be taken at the 400 level.

Ordinarily, no Master's degree program may include more than six credit hours in Research Topics (597) or Graduate Reading (598), or a combination thereof. Master's degree students may not enroll in tutorials carrying the course-numbers 497 or 498.

### Research-Tools Requirement

Individual Master's degree programs may have a requirement of translation proficiency in a foreign language, statistics, computer literacy, or the like. Students seeking translation skills are encouraged to enroll in courses in the Department of Modern and Classical Languages designed specifically for them. Research-tool proficiency may be demonstrated through examination if permitted by the major field. Arrangements for administration of such an exam are the responsibility of the major field.

### Residency

Except for students in the School for Professional Studies, each full-time Master's degree student must devote at least one calendar year or the equivalent to their program of study. For part-time students, three years is generally the norm. Following admission to Classified status, the student in active pursuit of the Master's degree must maintain continuous enrollment during the nine-month academic year.

If the student is following a program leading to the non-

research Master's degree to be completed through attendance during Summer Sessions exclusively, s/he adheres to the mandatory-continuous-enrollment policy by being at SLU every summer (unless a formal petition for a temporary leave of absence is approved by the major field and the Associate Dean or designee of the particular school/college/center) until degree requirements are fulfilled.

### **Advancement to Candidacy**

The Master's degree student anticipating the final academic term in residence must file an application for degree. The application must be completed, by a set date in that final term. Subsequently, the student receives a candidacy packet that includes information to be reviewed and checked by the student and the advisor. If a research degree is sought, the thesis proposal must be prepared, receive major-field approval, and be filed with the Master's Candidacy Advisor as part of the candidacy process. Following filing of the cited materials and favorable action by the Associate Vice President for Graduate Education, a student in good academic standing becomes a Candidate for the Master's degree.

Students seeking non-research degrees by attendance exclusively during Summer Sessions should initiate the candidacy process before the beginning of the final at SLU.

### **Thesis**

The Candidate for a research Master's degree must write a thesis that reflects thorough knowledge of the subject field, the power of independent thought, and the completion of original research.

Graduate Education requires the formal appointments of three Graduate Faculty readers of the thesis, one of which is the student's mentor. The acceptable thesis must be approved in writing by all three readers. A student ordinarily may not circulate the thesis among the approved faculty readers during the summer months. Likewise, a student should not expect conferral of a research Master's degree during or at the end of the Summer Sessions. Exceptions may be granted on individual bases, but only with prior approval of the student's candidacy committee and the major field chairperson or director.

Research Master's degree students must formally enroll for six credit hours of Thesis Research within the ordinary time period to the degree.

The written work must follow a composition format within guidelines established by the major field and the Formatting Guide. The Master's Candidacy Advisor completes a format evaluation of the thesis and abstract. The student will then submit the abstract to [ProQuest at \(www.etdadmin.com/slu\)](http://www.etdadmin.com/slu).

### **Essay**

In some Master's degree programs, a scholarly essay, pertaining to some phase of the major field discipline, is

required for the non-research degree. Such a requirement is determined by the major field, not by the University.

### **Comprehensive Degree Examination**

Ordinarily during the final academic term at SLU, the Master's degree student must take and pass a comprehensive oral examination. The Master's degree student is required to register for Special Study for Examination (zero credit) during that term. A Master's degree student may enroll not more than twice in Special Study for Examination without permission of the Associate Dean. Advancement to candidacy must precede this examination.

The examination is administered by a committee of three or more faculty recommended by the major-field chairperson and approved by the Associate Vice President for Graduate Education. The final examination covers the major field and, if formalized, the minor field as well.

The student fails the examination if not given satisfactory evaluations by two of the three examiners. Official transmission of the outcome of the examination is by letter to the Candidate and from the Associate Vice President for Graduate Education.

If the student fails the comprehensive oral examination, the examination may be repeated, but only once, provided that a second exam is recommended by the committee and is approved by the Dean. Ordinarily, a second examination will not be scheduled during the same academic term as the first.

### **Ordinary Time to Degree**

The entire Master's degree program, exclusive of prerequisites, is expected to be completed within a five-year time period, beginning with the academic term of the first course applicable to the degree. Students pursuing degrees by attendance only during the Summer Sessions are expected to complete all requirements for their non-research degrees within a period of six consecutive summers.

Should the five years (or six summers) pass without the student completing all degree requirements, that student ceases to be in good academic standing unless s/he petitions a successful extension to be approved by the Dean or Director of the particular school/college/center and the Associate Vice President for Graduate Education. Extensions are usually granted for no longer than one calendar year at a time. Ordinarily, for a student pursuing a research degree, each extension carries with it the requirement of registration for one additional credit hour (beyond the required six credits) of Thesis Research. The student taking a non-research Master's degree and exceeding the time-to-degree limit must also petition an extension and is required to take an additional credit-hour per year until completion.

### **Additional Departmental Requirements**

In addition to these general requirements, each department or major field may, with the approval of Graduate Education, set

additional requirements that are pertinent to the particular area of study.

## The Specialist in Education Degree

[The Ed.S. degree](#) program, offered through the Department of Educational Leadership and Higher Education, is designed for the educator/practitioner seeking administrative certification at the elementary, middle, junior high, senior high, or school-district level. The viable applicant must possess, prior to matriculation, an appropriate Master's degree.

Requirements for the Ed.S. degree include completion of a minimum of 30 semester hours of post-baccalaureate study, at least 30 of which must be taken at Saint Louis University. For additional descriptive information about this program, see the Curricula and Courses section of the catalog under the Department of Educational Leadership and Higher Education.

## The Doctor of Education Degree

[The Ed.D. degree program](#) is preparation for educational-leadership roles through broadly based coursework and an extensive project focusing on practical needs within the major field. The successful applicant possesses a Master's degree in education or a related field, or an Ed.S. degree, and must complete, at SLU, a body of post-Master's academic work, much of it in the Department of Educational Leadership and Higher Education. The degree includes research preparation, practica, and internship experiences. Mandatory continuous enrollment is required during the nine-month academic year throughout the period of formal pursuit of the Ed.D. More extensive and detailed descriptions of the Ed.D. degree program are given in the Curricula and Courses section of the catalog under the Department of Educational Leadership and Higher Education and in the program handbook.

## The Doctor of Philosophy Degree

Applicants having superior previous academic records and showing strong potential for continued academic study and research may be admitted to pursue the Ph.D. degree. In some major fields, applicants possessing the Bachelor's degree may be admitted for direct study toward the doctorate. In others, requirements for the appropriate Master's degree must have been completed.

### Coursework

For the admitted student holding an appropriate Master's degree, the additional preparation for preliminary degree examinations generally will be approximately 24-30 credit hours. After the student has been enrolled at SLU for an academic term, s/he may petition for "advanced standing" and formal recognition of the applicability to the doctoral program of that academic work completed elsewhere. If the Master's

degree was obtained at SLU, this is not necessary. Additional graduate-level academic work, not part of any earned advanced degree, may be formally transferred into the doctoral program, but a minimum of 24 credit-hours of advanced academic work, prior to the research phase of the program, must be completed as a SLU doctoral student.

For the student admitted to pursue the Ph.D. degree directly from the baccalaureate, the total credit hours required prior to preliminary degree-exams may be as few as 48. See the Curricula and Courses section of the catalog and the program handbook for requirements in specific fields.

A formal minor at the doctoral level may be possible and must include at least 12 credit hours of post-baccalaureate work in the minor field; a minimum of nine of those hours must be strictly graduate level. If the student pursues a certificate, it ordinarily requires completion of minimally 15 credit hours, but a portion of those credits may also partially satisfy requirements for the degree sought.

Ordinarily, no doctoral program may include more than 20% of the coursework in preparation for preliminary degree examinations in Research Topics (697) or Graduate Reading (698), or a combination thereof. Graduate degree students are not permitted to take 400-level tutorials (identified by the course number 497 or 498).

### Research-Tools Requirements

Such requirements are not imposed as a whole because of variable needs across major fields. Most doctoral programs prescribe levels of competence to be attained in foreign language translation, statistics, computer literacy, or other tools of research. Students seeking translation skills are encouraged to enroll in courses in the Department of Modern and Classical Languages designed specifically for them. All research-tool competencies are generally to be developed in addition to the ordinary academic work required for the degree and may be demonstrated through examination if permitted by the major field.

### Residency

Each doctoral degree student is expected to spend at least one academic year or its equivalent in full-time pursuit of the degree although more time may be necessary. The minimum tenure in this regard is one full semester and a contiguous summer session. The student in active pursuit of the doctorate must maintain continuous enrollment during the nine-month academic year.

### Preliminary Degree Examinations

Each doctoral program will administer a written degree examination consistent with the expectations of the academic discipline. In some programs, a qualifying examination will be administered relatively early in the student's doctoral studies. In other programs, the written examination is structured to assess comprehensive knowledge of the discipline after all or

nearly all of the student's academic work has been completed. Written examinations will also be administered in the minor field of study if a student has declared a formal minor. The results of the written examinations are communicated by letter to the Associate Vice President for Graduate Education in care of the Doctoral Candidacy Advisor. If the student's performance is satisfactory, the department chairperson recommends a committee of five members of the Graduate Faculty to administer the oral examination.

### **Oral Examination**

An oral examination is scheduled in advance of the formalized research phase of the student's program and after the Associate Dean approves the examination committee. This examination may evaluate broad knowledge of the field or it may be largely focused on the dissertation proposal (usually consisting of a statement of the problem, literature review, and the research design prepared for the investigation) if the student's written preliminary degree-exam was comprehensive. At the end of the examination and before the committee is dismissed, the members of the examination committee independently complete confidential ballots evaluating the student's performance. These sealed ballots are then delivered to the Associate Vice President for Graduate Education in care of the Doctoral Candidacy Advisor. The Associate Vice President for Graduate Education formally communicates the outcome of the examination in writing to the student. Once the oral examination is successfully completed, the Doctoral Candidacy Advisor will prepare and deliver to the student all necessary forms for advancement to candidate status.

A student receiving two or more unfavorable evaluations fails the examination. Upon authorization by the Associate Dean, the oral examination may repeat once. Ordinarily, the second attempt should not be scheduled within the same academic term as the first. The committee that administered the first exam will also administer the second examination under ordinary circumstances. The major-field chairperson will submit a written request for a second examination to the Associate Dean or Director well in advance of the desired date of that exam. Should the outcome of the second examination be unsatisfactory, a third exam is rarely approved.

### **Advancement to Candidacy**

A formal prospectus setting forth the anticipated dissertation title and subject matter of the proposed investigation, recommendations of minimally three faculty readers of the dissertation, one of whom functions as mentor, and the application for candidacy must be filed with the Doctoral Candidacy Advisor after the student has passed the oral degree examination. This filing must not be delayed and is to occur before the substance of the dissertation research is undertaken. Some departments or major fields require a formal prospectus presentation.

If the proposed research involves laboratory animals, the

Animal Care Committee (ACC) of the University must review and approve the research design. If the intended investigation is to involve human subjects or their personal property (including archived matter), the research design and, if necessary, informed-consent materials must be submitted to the appropriate Institutional Review Board (IRB) of the University. Approval(s) must be secured before the gathering of data may begin and must also be submitted along with other candidacy application materials.

Upon submission of the materials outlined above, the student is advanced to the status of Candidate, and is informed in writing. Doctoral students anticipating degree conferral at University Commencement ceremonies in May should formally become Candidates before the end of the preceding Fall Semester.

### **Dissertation**

The ability to extend the knowledge base in the major field is a qualification distinctive to the Ph.D. degree. A Candidate for this most advanced degree must present substantial evidence of this ability by presenting and defending a piece of original and independent research on a topic of importance that has been previously unresolved within the major field.

Twelve semester hours of Dissertation Research are required of each student pursuing the Ph.D. Only after accumulating the total semester hours required may the student register for zero Dissertation Research credit.

The written work must follow a composition format within guidelines established by the major field and the Formatting Guide. The Master's Candidacy Advisor completes a format evaluation of the thesis and abstract. The student will then submit the abstract to [ProQuest at \(www.etsdadmin.com/slu\)](http://www.etsdadmin.com/slu).

### **Public Presentation and Defense of the Dissertation**

Across all major fields, Graduate Education requires a public, oral presentation and defense of the dissertation. The presentation should be scheduled after all Graduate Faculty readers have approved the general content of the dissertation. A Notification of Readiness form and a final draft paper copy of the dissertation with the abstract (for format review) must be submitted to the Doctoral Candidacy Advisor well in advance of (minimally three weeks) the presentation date. Candidates anticipating May graduation must submit the aforementioned materials no later than the date set in the Calendar of Deadlines supplement to the University Calendar. Following the presentation, the Candidate should expect questions from the readers and the assembled audience. The dissertation-committee chairperson serves as the moderator for the defense. At the conclusion, the readers may evaluate the performance of the Candidate, but the dissertation ballots are not signed individually until each committee member fully approves the dissertation.

### **Time-Period to Degree and Extensions of Time**



If the time in the degree program exceeds the five or seven years and doctoral requirements remain, the student must formally petition for an extension of the ordinary time period, providing a justification and calendar for completion, routing the petition through the mentor to the major-field chairperson or the graduate program director, Associate Dean and finally the Associate Vice President for Graduate Education. Generally, when such petitions are approved, extensions are given for one calendar year at a time for a maximum of three years. Any extension petitions beyond three years will be scrutinized very carefully. In part because such petitions typically occur during the research phase of the degree program, each such approval is also accompanied by the requirement of enrollment in one additional Dissertation Research credit (beyond twelve, which should have already been taken). (For Ed.D. students, the requirement of one additional credit-hour in Project Guidance accompanies each approval of a one-year extension.) Furthermore, if the time period has been exceeded to the extent that more than five calendar years have elapsed since preliminary degree examinations were passed, to remain active in the doctoral program the student will be required to retake the preliminary examinations to demonstrate currency in the major field, and, if appropriate, the minor field as well.

## The Multidisciplinary Doctoral Option

After having been formally and unconditionally admitted into an existing Ph.D. degree program and initiated doctoral studies, the Classified graduate student may decide to petition for transfer into the Multidisciplinary Doctoral Option. Because the availability of academic resources to support a multidisciplinary program must be critically investigated and reviewed, the Associate Dean or Center Director reserves final approval of this option. The Multidisciplinary Option is not available at the Master's level or toward another advanced degree.

To begin the transfer process, the student prepares a draft of a proposal that describes the multidisciplinary program envisioned. The title of the student's multidisciplinary program must be distinctly different from the departments and major fields of doctoral study at Saint Louis University. In particular, the draft must contain the rationale for the transfer, the full complement of applicable, post-baccalaureate academic work proposed, i.e. that already completed as well as the work yet to be taken, and the general area of dissertation research. With the proposal draft in hand, the student proceeds to select minimally five members of the Graduate Faculty to serve as a committee that, in effect, becomes the student's department or major field. To serve on the committee or not is the invited faculty member's option. A proposed chairperson of the committee is designated. At least one, and preferably a minimum of two, members of the committee must have authorization to direct doctoral dissertations (i.e. Mentor

Status).

A formal petition to transfer into the option, signed individually by all of the proposed committee members, must be submitted to the Associate Dean(s) and/or Center Director(s) Associate Vice President for Graduate Education. The petition with appropriate supporting documentation from the student's academic file is then transmitted to the proposed committee chairperson for evaluation of the student's preparedness for and potential for academic success in the envisioned program. By this time the proposal draft should have been critiqued by the committee and subsequently revised to reflect their evaluative comments.

If the recommendation from the proposed committee chairperson for approval of the transfer is positive, the petition (including the proposal) is reviewed by the Graduate Academic Affairs Committee (GAAC). The Associate Vice President for Graduate Education is the liaison to GAAC on behalf of the student, who should meet with the liaison at least once before GAAC considers the petition and proposal. The entire course of study will be reviewed toward approval by the Associate Vice President for Graduate Education. GAAC may annually review each multidisciplinary doctoral program and the progress therein, and make recommendations to the Associate Vice President for Graduate Education.

In addition to coursework, the program must include written and oral preliminary degree examinations to be administered by the committee in accordance with Graduate Education policy and regulations. Research-tool requirements are to be set as appropriate. The rules and regulations for advancement to candidacy also must be followed by the students pursuing this doctoral option.

## Dual-Degree Programs

There are a number of formally established, advanced [dual-degree programs](#). Within such a program, the student pursues two post-baccalaureate degrees concurrently. Separate applications must be made for the individual degree programs, and admission to pursue one of the degrees does not guarantee admission to the dual-degree program.

A practical reason for the student to pursue a specific pair of advanced degrees concurrently is the sharing of some coursework requirements. The applicant should apply to the more competitive of the two programs first. The individual major-field components of a dual-degree program must be initiated reasonably close together in time such that appropriate integration of the individual programs takes place. The Directors of the two programs determine the necessary proximity of start dates in individual instances.

[Master in Health Administration \(M.H.A.\) / Master's in Business Administration \(M.B.A.\)](#)  
[Master in Public Administration \(M.P.A.\) / Law \(J.D.\)](#)

[Master in Urban Affairs \(M.U.A.\) / J.D.  
M.H.A./J.D.](#)  
[Master of Public Health \(M.P.H.\) / J.D.](#)  
[Ph.D. in Health Care Ethics / J.D.](#)  
[M.P.H. / M.D.](#)  
[Ph.D. in a Biomedical Science or Health Care Ethics / M.D.](#)  
[M.P.H./Master in Social Work \(M.S.W.\)  
M.P.A./M.S.W.](#)  
[M.P.H/ Master of Science \(M.S.\) in Nutrition and Dietetics .](#)  
[M.P.H. / Masters of Science in Nursing \(M.S.N.\)](#)  
[M.S.P.H. / Ph.D. in Psychology](#)  
[M.P.A / M.A. in Political Science](#)  
[M.P.H. \(Health Policy\)/J.D.](#)

Applicants or current students possibly interested in a dual-degree program should contact the administrative personnel in the two individual degree programs for additional information and advice, or refer to the brief summaries of the dual-degree programs found in the Curricula and Courses section of this catalog.

## Certificate Programs

There are several categories of post-baccalaureate [certificate programs](#). For example, nursing or counseling professionals with a Master's degree may seek academic qualification in an additional specialty or for licensure via post-Master's certificate programs. Specific application protocols, not unlike those for Classified status, are in place. The requirements for these certificates may be found in the Curricula and Courses section of this catalog. A Certificate in University Teaching Skills may be earned by graduate students through the Reinert Center for Teaching Excellence.

There are also opportunities in which a Classified graduate student may pursue a certificate concurrent with and parallel to seeking a post-baccalaureate degree. The objective is to improve the student competencies through inclusion of a series of courses that collectively focus on a particular area of study related to the broader degree. Admission to a parallel certificate requires a formal petition.

The certificate generally demands satisfactory completion of a minimum of 15 credit hours, and the program culminates with a capstone requirement. The majority of the certificate coursework may also partially fulfill requirements for the graduate degree.

Several such specific [certificate programs](#) have been developed.

# COURSES AND CURRICULA

## Introduction

This part of the Catalog starts with the collegiate units of the University within which Graduate Education resides. Within each collegiate unit, the major fields of graduate degree study are individually described. Exceptions are four departments, each of which is responsible for more than one distinct graduate program: Earth and Atmospheric Sciences (Geosciences: Geophysics, Geology, and Meteorology); Modern and Classical Languages (French, Spanish); Public Policy Studies (Public Administration, Public Policy Analysis, Urban Affairs, Urban Planning and Real Estate Development); and Theological Studies (Historical Theology, Theology). Each major-field subsection contains the names of the primary administrator(s) of the program, a brief overall description of the program, specific prerequisites, required courses, additional requirements for each available degree, and a listing in numerical order of the 500 through 800-level courses that graduate students may take for graduate credit. Descriptions of the 400-level courses are not given. The reader is referred for such descriptions to the undergraduate catalog of the University. In general, not every requirement for the degree is indicated within each program description. The requirements not given are those common to all programs and required by Graduate Education (and detailed in the General Requirements section of the Catalog).

The University's course code has a three-part structure: 1) the subject abbreviation, 2) the course number, and 3) the section number. Graduate credit may be earned upon completion of specific individual courses numbered 400 through 899. The level of these courses is understood as follows:

400 level: upper-division/beginning graduate  
 500 level: introductory/intermediate graduate  
 600 level: advanced graduate  
 700, 800 levels: professional/certificate

Graduate Education permits, subject to approval by the Graduate Academic Affairs Committee (GAAC), the double-numbering of courses involving two levels of academic work. A course may exist at both the 400 and 500 levels or at both the 500 and 600 levels. For such a course, the requirements and expectations differ with the course level. Both undergraduate and graduate students could conceivably take a 400/500-level course, but the undergraduate may not register for it at the 500 level without permission from the Dean or Director and the Associate Dean for Graduate Education of the particular School/College. A graduate student may not enroll in it at the 400 level. A doctoral student might register for a 500/600-level course under the 600 number, whereas a student seeking a Master's degree would likely take it at the 500 level. A Graduate School student may not take a course for credit at both the 500 and 600 levels. Such courses should be numbered with the last two digits identical at both levels.

Numbers in the 90's at the 500 and 600 levels refer to generic forms of academic work at the Master's and doctoral levels. Specifically, the numbers, generic titles, and credit hours are as follows:

590: Introduction to Graduate Study (0-1)

591-691: Journal Club (0-1)  
 592-692: Colloquium (0-1)  
 593-693: Special Topics (1-3)  
 594-694: Internship (0-6)  
 595-695: Special Study for Examinations (0)  
 596-696: Essay/Project Guidance (0-3)  
 597-697: Research Topics (1-3)  
 598-698: Graduate Reading Course (1-3)  
 599: Thesis Research (0-6)  
 5CR: Master's Degree Study [Section 90] (0)  
 5CR: Specialist Degree Study [Section 95] (0)  
 690: Introduction to Doctoral Study (0-1)  
 699: Dissertation Research (0-6)  
 6CR: Doctor of Education Degree Study [Section 97] (0)

## Graduate Offerings in the College of Arts and Sciences

**Michael Barber, S.J.,**  
*Collegiate Dean*

The College of Arts and Sciences, established in 1818, is the oldest academic division of the University. The primary objective of the College is to impart a liberal undergraduate course of studies designed to educate the whole person. The College includes twelve departments in the humanities and the natural sciences within which graduate work is offered at the Master's and Doctoral levels.

## AMERICAN STUDIES

**Matthew J. Mancini, Ph.D.,**  
*Department Chairperson*

The Department of the American Studies provides a systematic interdisciplinary approach to the historical study of the cultures of the United States, and to the critical analysis of their ongoing evolution. Within the framework of the great Jesuit humanist tradition, the American Studies Department trains students in the skills of clear thinking, writing and speaking, as well as the abilities associated with interpreting literary texts, evaluating historical documents and artifacts, applying humanistic and social science methods and theoretical approaches, and reflecting morally about the problems and issues they address in the classroom. The Department's mission includes advancing knowledge in the field through significant research and publication as well as training future scholars and teachers. The Department also educates scholars for professional futures in education, government, business, law, and other areas, and for participation as thoughtful citizens in the multicultural nation and world in which they will live and work.

## Master of Arts Master of Arts (Research)

### Prerequisites

Undergraduate degree or equivalent in a humanities or social science area. Additional prerequisite work may be required at the discretion of the Department.

### Required Courses

ASTD.510 Perspectives in American Studies.  
 At least one reading seminar offered by the Department.  
 At least one research seminar offered by the Department.  
*A formal minor is not permitted.*

## Doctor of Philosophy

### Prerequisites

Undergraduate degree or equivalent in a humanities or social science area; additional prerequisite work may be required at the discretion of the Department.

### Required Courses

ASTD.510 Perspectives in American Studies;  
 ASTD.550 The Practice of American Studies; and  
 ASTD.612 Dissertation Colloquium.  
 At least two reading seminars offered by the Department.  
 At least two research seminars offered by the Department.

### Additional Requirements

ASTD.694 Graduate Internship or completion of certification program from the Reinert Center for Teaching Excellence. Reading proficiency in one foreign language.  
*A formal minor is not permitted.*

## COURSE DESCRIPTIONS

### Graduate Courses

#### ASTD.510 Perspectives in American Studies (3)

Survey of theoretical frameworks for the interpretation of American culture over time. Examines the intersection of history and theory in the interdisciplinary study of the American experience from colonial encounters to the present. Critical readings in Marxism, feminism, semiotics, post structuralism, post-colonialism, race theory, and queer theory. (Offered every year.)

#### ASTD.515 American Photography (3)

Introduction to American photographers, diverse photographic trends and technologies, and the visual cultural analysis of major scholars in American Studies. Critical attention to representations of race and gender is emphasized throughout. (Offered occasionally.)

#### ASTD.523 Cultures of the American South (3)

Using fiction, film, history, literary criticism, music, and autobiography, the course identifies and investigates elements of the South's distinctiveness as well as the relation between the region and the Nation of which it forms a part. Specific topics include Southern fiction, race and slavery, and images of the South in American cultural expression. (Offered occasionally.)

#### ASTD.525 Tocqueville's America (3)

This course studies the culture of pre-Civil War America with emphasis on the 1830s and 1840s. The central text is Tocqueville's Democracy in America

through which the course investigates his perspectives on American culture. Other assigned readings help the student to understand the politics and culture of this era in more detail. (Offered occasionally.)

**ASTD.527 Anti-Black Racism (3)**

This course examines the role and reality of the Black presence in the dominant white European/American culture of North America from the landing of the first African slaves in the British colonies in 1619 to the late twentieth century. (Offered occasionally.)

**ASTD.535 American Autobiographies (3)**

Because the autobiographical act itself is essentially an interdisciplinary one, an examination of American autobiographies from the past several hundred years can be an especially intimate way to get inside the ongoing reality of American culture. Contemporary theories of autobiography are studied and critiqued. (Offered occasionally.)

**ASTD.537 America and the Transatlantic: Readings of the Middle Passage (3)**

Undoubtedly, all who experienced the Middle Passage were changed irreversibly. This course explores how this passage participated in the invention of both blackness and whiteness. Topics include the ongoing importance of the transatlantic experience to current American discussions of race, culture, migration, exile, holocaust and memory, and nation and citizenship. (Offered occasionally.)

**ASTD.540 Metropolitan America (3)**

Introduction to the study of American urban and suburban life. Course examines American cities, their cultures, and their built environments as these change over time. Students engage scholarship, develop visual literacy for "reading" the metropolis, and analyze the ways in which built environments shape and reflect American cultural meaning. (Offered occasionally.)

**ASTD.542 Workshop in the American Metropolis (3)**

An opportunity for graduate students to conduct intensive field study in the metropolis. St. Louis provides an excellent case study with its complex interplay of people, process, neighborhoods, industries, and natural features. Students undertake individual and group projects, tours, and fieldwork exercises in consultation with the Instructor. (Offered occasionally.)

**ASTD.550 The Practice of American Studies (3)**

Facilitates sound professional development to accompany graduate work in American Studies. Students analyze universities as diverse social institutions, review key aspects of academic labor, examine the purposes and stages of graduate training, and survey the broad range of professional options available with the M.A. and the Ph.D. degree. (Offered every year.)

**ASTD.560 Evangelical America (3)**

From the Great Awakening to the presidency of George W. Bush, evangelicalism has played a critical role in shaping American cultural and political institutions. This course explores causes and implications of evangelical influence. Topics may include revivalism, church and state, civil religion, and legislation regarding alcohol, slavery, abortion, and sexuality. (Offered every other year.)

**ASTD.574 Women's Lives (3)**

Examines the historical experiences and literary productions of women from diverse racial, ethnic, and religious backgrounds. Topics and courses considered may include novels, diaries, letter-writing, temperance, abolition, suffrage, and political leadership. (Offered occasionally.)

**ASTD.593 Special Topics in American Studies (3)**

**ASTD.594 Graduate Internship (1-3)**

Prerequisite: ASTD.500.

**ASTD.595 Special Study for Examinations (0)**

**ASTD.598 Graduate Reading Course (1-3)**

Prior permission of guiding professor and department/program chairperson required.

**ASTD.599 Thesis Research (0-6)**

**ASTD.5CR.90 Master's Degree Study (0)**

**ASTD.612 Dissertation Colloquium (1-3)**

Course is designed to facilitate the dissertation-writing process. Seminar discussions will focus on peer review of student generated works-in-progress. Required of all Ph.D.-degree students. May be repeated for credit at advisor's discretion. (Offered occasionally.)

**ASTD.615 Visual Culture Theory (3)**

Introduction to the theoretical models and questions that inform the wide ranging critical practices of visual culture studies. Course examines foundational texts in visual theory as well as many different cultural forms available to visual cultural analysis such as vision itself, material culture, museums, photographs, films, and television. (Offered occasionally.)

**ASTD.639 Reading Emerson: Race, Rights, and American Identity (3)**

Given that "race and rights [are] constitutive of Emerson's concept of American identity," this course examines Emerson's sermons, lectures, essays, and journal entries to discover the significance of race in his thinking. Topics include slavery and abolition, religion, individual rights, property, scientific racism, political responsibility, democracy, and national identity. (Offered every other Fall semester.)

**ASTD.642 Topics in American Urbanism (3)**

Intensive study of a topic in American urban culture, society, theory, or criticism. Course is framed as an interdisciplinary inquiry with a mix of scholarly texts and primary sources. Through focus on a single topic, students consider basic questions about the nature, experience, and quality of American urban life. (Offered occasionally.)

**ASTD.655 Seminar in American Intellectual History (3)**

This course deals with topics related to the ideas that inform American culture through history. Topics vary: e.g. pragmatism, Dewey, Emerson, history and philosophy of American education. (Offered every year.)

**ASTD.670 American Political Thought (3)**

This course focuses on selected ideas, issues, and institutions that have been central to the U.S. Constitution and the practice of American constitutionalism, from the founding era to the present. Readings emphasize seminal works in American political thought, which are supplemented by historical accounts, illustrative literature, and contemporary analyses. (Offered every year.)

**ASTD.671 Leadership and Culture (3)**

Focuses on how culture both constrains and empowers leaders as they attempt to influence various publics. Students examine political leaders and leaders of social movements, primarily in U.S. history, with an eye toward the connections between their policies, their rhetoric, and the institutional and cultural contexts in which they acted. (Offered occasionally.)

**ASTD.693 Special Topics in American Studies (3)**

**ASTD.694 Graduate Internship (1-3)**

Prerequisite: ASTD.500.

**ASTD.695 Special Study for Examinations (0)**

**ASTD.698 Graduate Reading Course (1-3)**

Prior permission of guiding professor and department chairperson required.

**ASTD.699 Dissertation Research (0-6)**

**ASTD.6CR.99 Doctor of Philosophy Degree Study (0)**

# BIOLOGY

**Robert M. Wood, Ph.D.,**  
*Department Chairperson*

The Department of Biology offers graduate degree study in two areas of specialization: Ecology, Evolution, and Systematics; and Cellular and Molecular Regulation. In addition to resources on the Frost campus, the Department makes use of facilities at the Missouri Botanical Garden and the St. Louis Zoological Park. The Department also operates Reis Biological Station in the Missouri Ozarks. The Reis Biological Station serves as a center for education and environmental research.

## Master of Science

### Prerequisites

Biology (a minimum of eighteen, upper-division credit-hours); Chemistry (a minimum of eight, upper-division credit-hours including two semesters of organic chemistry or one semester of organic chemistry and the other of biochemistry); Physics (two semesters); Mathematics (through a first course in Calculus).

### Required Courses

BIOL.582 Graduate Seminar: Cellular and Molecular Regulation (two semesters) OR  
 BIOL.584 Graduate Seminar: Ecology, Evolution, and Systematics (two semesters)  
 BIOL.586 Scientific Communication in Biology  
 Additional Requirements  
 BIOL.591 Departmental Seminar (every semester in residence)  
*A formal minor is not permitted.*

## Master of Science (Research)

### Prerequisites

The same Biology, Chemistry, Mathematics, and Physics prerequisites as listed previously for the non-research option Master of Sciences degree.

## *Ecology, Evolution, and Systematics Specialization*

### Additional Prerequisites

Courses in at least four of the following areas: genetics, general ecology, evolution, introductory statistics, general botany, and a taxonomically oriented course.

### Required Courses

BIOL.509 Biometry (or equivalent graduate-level statistics)  
 BIOL.555 Advanced Ecology  
 BIOL.556 Advanced Evolution and

BIOL.584 Graduate Seminar: Ecology, Evolution, and Systematics (one semester)

BIOL.586 Scientific Communication in Biology

BBS.510 Ethics for Research Scientists

### Additional Requirement

BIOL.591 Department Seminar (every semester in residence)

## *Cellular and Molecular Regulation Specialization*

### Additional Prerequisites

Courses in at least three of the following areas: genetics, introductory biological chemistry, cell biology, physiology, molecular biology, microbiology or immunology.

### Required Courses

BIOL.507 Advanced Biological Chemistry

BIOL.508 Advanced Cell Biology

BIOL.510 Cellular and Molecular Genetics

BIOL.570 Advanced Molecular Biology

BIOL.582 Graduate Seminar: Cellular and Molecular Regulation (two semesters)

BIOL.586 Scientific Communication in Biology

BBS.510 Ethics for Research Scientists

### Additional Requirement

BIOL.591 Departmental Seminar: (every semester in residence)

## Doctor of Philosophy

### Prerequisites

Biology (a minimum of eighteen, upper-division credit-hours); Chemistry (a minimum of eight, upper-division credit-hours including two semesters of organic chemistry or one semester of organic chemistry and the other of biochemistry); Physics (two semesters); Mathematics (through a first course in Calculus).

The course program for the Doctor of Philosophy degree requires a minimum of 48 semester hours, when pursued from the baccalaureate, exclusive of Dissertation Research. New Ph.D. degree students who enter the program with a BS or BA degree may take the written preliminary exam the second Spring semester they are in residence. New Ph.D. students who enter the program with a master's degree are required to take the written preliminary exam the first Spring semester they are in residence.

*A formal minor is not permitted.*

## *Ecology, Evolution, and Systematics Specialization*

### Additional Prerequisites

Courses in at least four of the following areas: genetics, general ecology, evolution, introductory statistics, general

botany, and a taxonomically oriented course (e.g., ichthyology, herpetology, local flora).

### Required Courses

BIOL.509 Biometry (or equivalent graduate-level statistics)  
 BIOL.555 Advanced Ecology  
 BIOL.556 Advanced Evolution  
 BIOL.584 Graduate Seminar: Ecology, Evolution, and Systematics (one semester)  
 BIOL.586 Scientific Communication in Biology  
 BBS.510 Ethics for Research Scientists  
*and one research-tool course from the following offerings:*  
 BIOL.519 GIS in Biology  
 BIOL.546 Principles of Phylogenetic Systematics  
 BIOL.558 Applied Population Genetics  
 BIOL.578 Molecular Phylogenetic Analysis  
 PT.G535 Introduction to Microscopy Techniques or other appropriate course as determined by the student's dissertation committee

### Additional Requirement

BIOL.691 Department Seminar (every semester in residence)

## *Cellular and Molecular Regulation Specialization*

### Additional Prerequisites

Courses in at least three of the following areas: genetics, introductory biological chemistry, cell biology, physiology, and developmental biology.

### Required Courses

BIOL.507 Advanced Biological Chemistry  
 BIOL.508 Advanced Cell Biology  
 BIOL.510 Cellular and Molecular Genetics  
 BIOL.570 Advanced Molecular Biology  
 BIOL.582 Graduate Seminar/Cellular and Molecular Regulation (three semesters)  
 BIOL.586 Scientific Communication in Biology  
 BBS.510 Ethics for Research Scientists  
 Additional Requirement  
 BIOL.691 Departmental Seminar (every semester in residence)

### Upper-Division Courses

BIOL.402 Vertebrate Reproductive Physiology (3)  
 BIOL.404 Pollination Biology (3)  
 BIOL.406 Structure and Function of Ecosystems (3)  
 BIOL.409 Plant Ecology (3)  
 BIOL.410 Natural History of the Vertebrates (4)  
 BIOL.411 Natural History (1)  
 BIOL.415 Nerve Cell Mechanisms in Behavior (3)  
 BIOL.420 Aquatic Ecology (4)  
 BIOL.421 Biology and Classification of Orchids (3)  
 BIOL.424 General and Medical Entomology (4)  
 BIOL.426 Biology of Amphibians and Reptiles (4)  
 BIOL.427 Field Studies with Amphibians and Reptiles (1)  
 BIOL.428 Biology of Fishes (4)  
 BIOL.429 Biology of Fishes: Field Trip (1)  
 BIOL.431 Biology of Birds (4)  
 BIOL.432 Cave Biology (4)

BIOL.433 Spring Flora of the Ozarks (4)  
 BIOL.434 Systematic Biology (3)  
 BIOL.435 Biology of Parasitic Organisms (4)  
 BIOL.436 Animal Behavior (3)  
 BIOL.437 Animal Behavior Laboratory (1)  
 BIOL.438 Biology of Mammals (4)  
 BIOL.440 Applied Ecology (3)  
 BIOL.441 Comparative Animal Physiology (3)  
 BIOL.444 Vertebrate Histology: Structure and Function of Tissues (4)  
 BIOL.445 Ecological Risk Assessment/Risk Management (3)  
 BIOL.446 Exercise Physiology (3)  
 BIOL.447 Electron Microscopy (3)  
 BIOL.448 Conservation Biology (3)  
 BIOL.450 Introductory Endocrinology (3)  
 BIOL.451 Behavioral Endocrinology (3)  
 BIOL.460 Developmental Biology (3)  
 BIOL.461 Developmental Biology Laboratory (2)  
 BIOL.463 Foundations of Immunobiology (3)  
 BIOL.464 General Microbiology (3)  
 BIOL.465 Microbiology Lab (2)  
 BIOL.467 Population Biology (3)  
 BIOL.468 Landscape Ecology and Management (3)  
 BIOL.470 Molecular Biology (3)  
 BIOL.476 Plant Biochemistry (3)  
 BIOL.480 Internship in Conservation (3)

### COURSE DESCRIPTIONS

#### BIOL.500 Problems in Vertebrate Morphology (2-3)

Studies of the gross and microscope anatomy of the organs and organ systems of vertebrates. Gross dissection and histological preparation of selected structures in typical vertebrates of different classes. (Offered occasionally.)

#### BIOL.501 Ecology of Vertebrate Reproduction (3)

A study of life history traits that lead to the evolution of sexual selection, parthenogenesis, viviparity, sex ratios, and environmental and genetic sex determination. (Offered every other Fall.)

#### BIOL.502 Comparative Vertebrate Reproduction (3)

Prerequisites: BIOL.344, BIOL.346, or equivalents. Lecture two hours, laboratory two hours per week. Advanced study of reproductive anatomy and physiology of the vertebrates. (Offered every other Fall.)

#### BIOL.504 Problems in Experimental Embryology (2-4)

Laboratory work conducted on an individual basis in selected areas of experimental embryology. (Offered occasionally.)

#### BIOL.506 Advanced Topics in Molecular Biology (4)

Prerequisite: BIOL.302 and 304 or equivalent or permission of the Instructor. This course encompasses the central roles of DNA and RNA in molecular biology and the technologies used to analyze and manipulate nucleic acids in biomedical research. Topics to be covered are the structure, topology, and arrangement of nucleic acids in genomes, recombinant DNA technology, bioinformatics, and current research in molecular biology. (Offered every Fall semester.)

#### BIOL.507 Advanced Biological Chemistry (3)

Prerequisite: no prerequisites for graduate students. An in-depth analysis of selected topics in biological chemistry. Topics include fundamentals of protein chemistry, protein three-dimensional structures, protein folding, enzyme kinetics and catalysis, and protein metabolism. (Offered every Spring.)

#### BIOL.508 Advanced Cell Biology (3)

Prerequisite: no prerequisites for graduate students; undergraduates by instructor permission. This course will explore cell biology principles, experimental strategies, and current research questions. Topics include how specific molecules regulate cellular activity and how cell structure contributes to various processes. Emphasis will be on primary literature, experimental design and interpretation of results. (Offered each Fall.)

#### BIOL.509 Biometry (4)

Prerequisite: Graduate standing in Biology. This course is intended for graduate students in biology. The course will cover the description of biological distributions and probabilities; the application of hypothesis testing,

including the relationship between biological and statistical hypothesis; the nature of biological data, samples and sampling regimes, and how these fit within the scientific method. Central to the course is use of biological models and experiments. (Offered each Fall.)

#### **BIOL.510 Cellular and Molecular Genetics (3)**

The cellular and molecular basis of genetically controlled biological phenomena from microorganisms to complex, multicellular organisms. Topics considered are transcriptional regulation in prokaryotes and eukaryotes, chromatin structure and function, sporulation, yeast mating types, pattern formation in *Drosophila*, sex determination, and genetic control of development in *C. elegans*. Experimental methods used to study these events will be stressed. (Offered every year.)

#### **BIOL.512 Signal Transduction (3)**

Mechanisms by which cells receive and respond to external signals; properties of the cell membrane; receptor structure and function; G protein-regulated transmembrane signaling; intercellular communication; first and second messengers. Experimental methods used to study these phenomena will be emphasized. (Offered every other year.)

#### **BIOL.519 GIS in Biology (3)**

This course provides an introduction to the application of geographic information system (GIS) techniques to research in organismal biology. The goal of this course is to provide training in the spatial analysis of biodiversity using GIS software. The course will involve an integration of lectures, group discussions, and computer exercises. (Offered occasionally.)

#### **BIOL.530 Problems in Vertebrate Physiology (2-4)**

Prerequisite: BIOL.346 or BIOL.441. Laboratory research on current problems in organ system physiology. (Offered every semester.)

#### **BIOL.533 Principles of Phylogenetic Systematics (3)**

General survey of the principles of systematics and taxonomy. Topics covered include a history of taxonomic and systematic methods, classification, species and speciation, population variation and its analysis, taxonomic publications, and rules of zoological nomenclature. (Offered every other year.)

#### **BIOL.534 Problems in Cell Biology (1-2)**

Laboratory experimentation to answer specific questions concerning DNA replication and cell division. Students design and carry out experiments to test a specific hypothesis. (Offered occasionally.)

#### **BIOL.535 Current Topics in Cell Biology (2)**

Prerequisite: Biology 508 or permission of instructor. This graduate-level course covers a specific topic in cell biology in depth. The topic may vary each year. Students will research and present original research articles from both classic and current literature. (Offered annually.)

#### **BIOL.540 Problems in Genetics (1-4)**

Prerequisite: BIOL.303 or equivalent. Advanced experimental work in selected areas of genetics. (Offered occasionally.)

#### **BIOL.541 Ecological Genetics (3)**

Prerequisite: BIOL.303 or equivalent. Lectures and discussion on the genetic factors determining the abundance and distribution of protista, animals and plants, including the Hardy-Weinberg Equilibrium, community interactions and genetic polymorphisms. (Offered every other year.)

#### **BIOL.542 Problems in Evolutionary Biology (1-4)**

Laboratory and field research on contemporary problems in evolutionary biology. (Offered occasionally.)

#### **BIOL.545 Biogeography (3)**

A discussion of the major distribution patterns of plants and animals and the mechanisms responsible for these patterns. (Offered every other Fall semester.)

#### **BIOL.548 Conservation Biology (3)**

Fundamental principles of biodiversity maintenance through the management of ecosystems and populations are explored. Begins with the philosophical underpinnings of the conservation movement as developed in the writings of Leopold and moves on to extensive treatment of modern conservation practices directed toward preservation of imperiled systems. (Offered every other year.)

#### **BIOL.550 Problems in Ecology (2-4)**

Prerequisite: BIOL.406 or equivalent. Independent laboratory or field study on a specific problem in ecology. (Offered occasionally.)

#### **BIOL.551 Plant Ecophysiology (3)**

Prerequisite: BIOL.406 or equivalent. A treatment of environmental effects on the physiology of vascular plants with reference to the whole organism and ecological interactions. (Offered occasionally.)

#### **BIOL.555 Advanced Ecology (3)**

Prerequisite: BIOL.475 or equivalent. An in-depth treatment of the relationships between organisms and their environment via lecture, discussion and seminar formats plus occasional laboratory and field exercises. (Offered occasionally.)

#### **BIOL.556 Advanced Evolution (3)**

This course explores aspects of natural selection, adaptation, gene flow, speciation, and evolutionary hypothesis testing at a level consistent with a modern graduate education containing a component of evolutionary theory. The format of the course includes both lecture and discussion of the topics outlined in the topical syllabus. Each week will include a set of readings from both historical/seminal writings in an area as well as current papers that treat the topics. (Offered occasionally.)

#### **BIOL.558 Applied Population Genetics (3)**

Population genetics is the study of origin, amount, and distribution of genetic variation in populations, and the fate of this variation over time and across space (Templeton, 2006). This course examines the primary concepts of population genetics through an integrated approach involving basic theory, empirical studies derived from primary contemporary literature, and hands-on experience with software application. (Offered occasionally.)

#### **BIOL.560 Development Genetics (3)**

Exploration of genetic mechanisms by which genomically equivalent cells generated from the fertilized egg become different during development. The role of cytoplasmically located determinants and progressive cell interactions on differential gene expression. The genetic basis of pattern formation in the vertebrate limb and nervous system, particularly during *Drosophila* develop emphasizing the role of maternal effect, segmentation, and homeotic selector gene expression. (Offered occasionally.)

#### **BIOL.561 Principles of Developmental Biology (3)**

This course investigates cellular and molecular mechanisms responsible for building multicellular organisms. Topics include fertilization, cleavage, gastrulation, axis specification, and organogenesis, with particular attention devoted to the experimental basis for current models. The connections between developmental biology and medical and environmental issues will also be considered.

#### **BIOL.564 Concepts of Immunology (3)**

The cellular and molecular basis of immune function. Topics include receptors on T, B and antigen presenting cells, cytokine networking, complement, function of the major histocompatibility complex, hypersensitivity of the immune system, and infection by HIV. (Offered every other year.)

#### **BIOL.567 Advanced Population Biology (3)**

Prerequisites: a course in general ecology and a course in statistics. This course covers the theoretical and empirical investigations of population ecology and genetics. Major topics will include population growth and dynamics, population regulation, evolution of life histories, ecological interactions between populations, and evolutionary ecology of populations. (Offered every other year.)

#### **BIOL.570 Advanced Molecular Biology (3)**

Focuses on the central molecules of life DNA, RNA, and proteins, where the synthesis, function, and interactions between these molecules are examined using recent journal articles. An emphasis on emerging methods centers on gaps in current knowledge and strategies for future experimentation to fill these gaps. (Offered every year.)

#### **BIOL.576 Problems in Botany (2-4)**

Current problems in plant morphology and systematics. Library/laboratory phase stressed. (Offered occasionally.)

**BIOL.578 Molecular Phylogenetic Analysis (3)**

Prerequisites: BIOL.301 and BIOL.434 or their equivalents. This course is designed to familiarize students with the theory and techniques of molecular phylogenetic analysis. It is primarily a hands-on computer-based course. Students will learn to use various methods for editing and aligning molecular sequence data, generating phylogenetic trees, testing support and exploring character evolution. (Offered occasionally.)

**BIOL.582 Graduate Seminar/Cellular and Molecular Regulation (1-2)**

In depth analysis of one or two topics of current importance to cellular and molecular biology and the regulation of biological processes will be developed each semester. Students will present a lecture building on some aspect of the topic being analyzed. The focus is on skills of literature analysis, lecture organization, and oral presentation as well as on learning about a specific discipline related topic. (Offered every semester.)

**BIOL.584 Graduate Seminar: Ecology, Evolution, and Systematics (2)**

Readings and discussions of current literature in areas related to ecology, evolution, and systematics. Students are encouraged to present research plans and report on research progress. Each semester several topics will be examined in depth. (Offered every year.)

**BIOL.586 Scientific Communication in Biology (3)**

A course designed to teach students to prepare scientific manuscripts for publication and for designing oral presentations at scientific meetings. Students will learn the skills of preparing graphics and visual aids employing computer programs. (Offered every year.)

**BIOL.591 Department Seminar (0-1)**

Selected topics in Biology. Attendance and participation required for all M.S and M.S.(R) students in biology. (Offered every semester.)

**BIOL.595 Special Study For Exams (0)****BIOL.597 Research Topics (Master's only; 1-3)**

Prior permission of guiding professor and department/program chairperson required. (Offered every semester.)

**BIOL.598 Graduate Reading Course (Master's only; 1-3)**

Prior permission of guiding professor and department/program chairperson required. (Offered every semester.)

**BIOL.599 Thesis Research (0-6)****BIOL.5CR.90 Master's Degree Study (0)****BIOL.604 Current Topics in Developmental Biology (3)**

Review and discussion of recent literature dealing with selected areas in developmental biology, including pattern formation, cell communication, cell differentiation, and molecular basis of development. (Offered occasionally.)

**BIOL.615 Neural Basis of Behavior (3)**

Topics to be discussed include molecular biology and genetic analysis of channels, electrophysiology of synapses and transmitter amines, second messenger systems, molecular genetics of color vision, color blindness, sensory transduction, and development of neural circuitry. (Offered every year.)

**BIOL.630 Special Studies in Comparative Physiology (1-4)**

Conferences and library or laboratory problems dealing with specific functions of animals from the comparative viewpoint. (Offered every semester.)

**BIOL.631 Comparative Immunobiology (3)**

Discussion of defense reactions of invertebrates and non-mammalian vertebrates from textbooks and current literature. (Offered every other Fall semester.)

**BIOL.632 Comparative Endocrinology (3)**

Survey of endocrine functions in invertebrates and vertebrates. Discussion of current models of mechanisms of action of hormones. (Offered occasionally.)

**BIOL.633 Special Studies in Insect Physiology (1-4)**

Library or laboratory study on a specific question. (Offered every semester.)

**BIOL.646 Exercise Biology (3)**

Prerequisites: Minimally undergraduate biochemistry and cell biology. Course will examine the responses and adaptations to physical exercise and/or inactivity with special emphasis on nutrition, energy metabolism, and endocrinology, and their relation to health. (Offered at least every other year.)

**BIOL.651 Plant-Water Relationships (3)**

Prerequisite: BIOL.349 or permission of instructor. An in-depth treatment of the water relationships of vascular plants via lecture, discussion and seminar formats. (Offered occasionally.)

**BIOL.691 Departmental Seminar (0-1)**

Selected topics in biology. Attendance and participation required for all Ph.D. students in Biology. (Offered every semester.)

**BIOL.695 Special Study for Examinations (0)****BIOL.697 Research Topics (Ph.D. only; 1-3)**

Prior permission of guiding professor and department/program chair required. (Offered every semester.)

**BIOL.698 Graduate Reading Course (Ph.D. only; 1-3)**

Prior permission of guiding professor and department/program chair required.

**BIOL.699 Dissertation Research (0-12)****BIOL.6CR.99 Doctor of Philosophy Degree St**

## CHEMISTRY

**Steven W. Buckner, Ph.D.,**

*Department Chairperson*

**R. Scott Martin, Ph.D.,**

*Graduate Program Director*

The Department of Chemistry offers two Master's degree programs. The Master of Science (Research) degree program is typical for full-time research graduate students and offers specialization in the fields of analytic, inorganic, organic, or physical chemistry. This program includes a core curriculum of 12 credit-hours consisting of a minimum of two courses from each of the two specified areas. The Department also offers a course-based Master of Science degree. This program requires a minimum of 24 credit-hours in the Department and is specifically designed for the working professional and students transitioning into the PhD program. Both degrees allow for a broad coverage of chemistry coursework, while permitting students to specialize in their field of interest. The Department of Chemistry also offers a Doctor of Philosophy degree. This degree program requires a total of 60 credit hours of lecture coursework and research classes (including 12 hours of dissertation research).

This program is designed to allow students to specialize in one of the four areas: analytical, inorganic, organic, or physical chemistry.

## Master of Science

### Prerequisites



In addition to 18 credit-hours in advanced undergraduate Chemistry courses or the equivalent, a background in mathematics which includes at least two courses in calculus and a minimum of one year of physics are required.

#### Required Courses

Students must take 24 hours of coursework in the Department. CHEM.513 (Advanced Inorganic Chemistry) and CHEM.520 (Analytical Chemistry II) must be taken unless they or their equivalents have already been taken for undergraduate credit. *A formal minor is not permitted.*

## Master of Science (Research)

#### Prerequisites

In addition to 18 credit-hours in advanced undergraduate Chemistry courses or the equivalent, a background in mathematics which includes at least two courses in calculus and a minimum of one year of physics are required.

#### Research Component

Students are required to complete 3 hours of Introductory Research in a CHEM.5x8 course in addition to 6 hours of Thesis Research, CHEM.599 and Research Seminar, CHEM.591, culminating in an oral presentation of their research work.

#### Required Courses (Core)

Students must take 12 hours of course courses, with 6 hours from (1) *Synthesis & Materials Chemistry* courses and 6 hours from (2) *Analytical & Physical Methods* (see Course Descriptions below). Upper level undergraduate courses CHEM.413 (Advanced Inorganic Chemistry) and CHEM.420 (Analytical Chemistry II) must be taken for graduate credit unless they or their equivalent have already been taken for undergraduate credit.

*A formal minor not permitted.*

## Doctor of Philosophy

#### Prerequisites

In addition to 18 credit-hours in advanced undergraduate Chemistry courses or the equivalent, a background in mathematics which includes at least two courses in calculus and a minimum of one year of physics are required.

#### Research Component

Students are required to complete 6 hours of Introductory Research in a CHEM.5x8 courses in addition to 12 hours of Dissertation Research, CHEM.699; 3 hours of Methods in Research CHEM.6x8; 3 hours of Advanced Research CHEM.6x9; 3 hours of Proposal Writing CHEM6990; and Research Seminar, CHEM.591/691, culminating in an oral presentation of their research work.

#### Required Courses (Core)

Students must take 12 hours of core courses, with 6 hours from (1) *Synthesis & Materials Chemistry* courses and 6 hours

from (2) *Analytical & Physical Methods* (see Course Descriptions below).

Upper level undergraduate courses CHEM.413 (Advanced Inorganic Chemistry) and CHEM.420 (Analytical Chemistry II) must be taken for graduate credit unless they or their equivalent have already been taken for undergraduate credit.

*A formal minor not permitted.*

### COURSE DESCRIPTIONS

#### Graduate Courses

All graduate courses are typically offered every other year unless otherwise specified. Some of the courses listed below may be offered in the Summer session. Information on summer offerings is available from the Graduate Program Director or Department Chairperson.

#### Synthesis & Materials Chemistry

##### CHEM 513: Inorganic Chemistry (3)

The development and foundation of the periodic classification of the elements and an introduction to the systematic study of the properties of the elements and their compounds.

##### CHEM.515 Organometallic Chemistry (3)

Prerequisites: Undergraduate Organic Chemistry. Key aspects of organometallic and metal cluster chemistry: rationalization of organometallic complexes using the eighteen-electron rule; metal carbonyl complexes and their analogs; commonly encountered carbon- and heteroatom-based ligands; isolobal theory; mechanisms of organometallic reactions; organometallic chemistry in catalysis with a focus on some key industrial homogenous catalytic processes.

##### CHEM.517 Solid State Chemistry (3)

This course gives students a thorough grounding in solid state chemical structure and function. It begins with a survey of basic crystalline packing and symmetry leading to descriptions of critical physical properties: electrical, magnetic and superconducting. Some aspects of solid state analysis will be described, with an emphasis placed on X-ray diffraction (XRD) techniques.

##### CHEM.519 Special Topics in Inorganic Chemistry (3)

Prerequisite: Permission of the Instructor. Scheduling in a given semester depends on the availability of an instructor and anticipated enrollment.

##### CHEM.540 Advanced Organic Chemistry (3)

Prerequisite: Undergraduate Organic Chemistry. Physical organic chemistry including molecular orbital theory, structure-activity relationships, stereochemistry, reactive intermediates, determination of organic reaction mechanisms.

##### CHEM.541 Synthetic Organic Chemistry (3)

Prerequisite: Undergraduate Organic Chemistry. Emphasis on modern synthetic methods, mechanisms and application to the synthesis of complex structures.

##### CHEM.544 Polymer Chemistry (3)

Prerequisite: Undergraduate Organic Chemistry. A survey of polymer chemistry including the mechanisms of polymerization and the characterization and structure-property relationships of polymers.

##### CHEM.545 Principles of Medicinal Chemistry (3)

Prerequisite: Undergraduate Organic Chemistry. This course examines the relationship between chemical structure and biological activity with an emphasis on drug design and modification. Specific drug classes which will be used as illustrative of this relationship include, cardiovascular drugs, anti-inflammatory agents, steroid hormones, and chemotherapeutic agents (antibiotics), among others.

##### CHEM.549 Special Topics in Organic Chemistry (3)

Prerequisite: Permission of the Instructor. Scheduling in a given semester depends on the availability of an instructor and anticipated enrollment. (Offered occasionally.)

**CHEM.551 Fundamentals and Design of Nanoarchitectures (3)**

This course addresses the development and application of nanomaterials. Synthetic and preparative processes for making nanoscale structures and materials are addressed along with techniques for their characterization. Theoretical models for describing physical and chemical properties of nanostructures are presented. Nanotechnology and applications of nanostructures are covered.

**Analytical & Physical Methods****CHEM.512 Chemical Applications of Group Theory and Spectroscopy (3)**

Prerequisite: CHEM.413 or the equivalent. Introduction to spectroscopic techniques applied to structural problems in inorganic chemistry. Topics include IR, UV, visible, NMR and ESR spectroscopy; ligand field theory and group theory in interpretation of spectra.

**CHEM.520 Instrumental Analysis (3)**

This course will examine instrumentation required analytical determinations. We will take both a broad and a more detailed look at instrumental methods for chemical analysis. We will study a broad range of chemical analysis methods, including chromatographic, electrochemical, optical spectroscopic, and mass spectral methods. Time permitting we will also touch on x-ray, surface and few more esoteric techniques. We will also learn some of the more detailed electronic and engineering aspects of chemical instrumentation.

**CHEM.521 Environmental Chemistry (3)**

Prerequisites: CHEM.342 and 343 or CHEM.346 and 347 or the equivalent. Concerns the impact of human activities on our natural surroundings. Course will focus on the chemical processes which occur in the atmosphere and in bodies of water and the effect of release of chemical pollutants on these systems. Sources of pollutants will be covered to a limited extent.

**CHEM.524 Electroanalytical Chemistry (3)**

Prerequisite: CHEM.320. This course is designed to introduce you to the fundamentals of electrochemistry and to discuss electroanalytical techniques. Topics to be covered include: chronoamperometry, cyclic voltammetry, scanning electrochemical microscopy, spectroelectrochemistry, electrochemiluminescence, and electrochemical sensors.

**CHEM.525 Bioanalytical Methods of Analysis (3)**

Prerequisites: CHEM.320, CHEM.346, 347, 348 or the equivalent. This course will focus on analytical techniques and methodologies that are used to monitor biologically important compounds in various matrices. Topics will include the use of enzymes in bioassays, immunoassays involving antibody-antigen interactions, mass spectrometry in proteomics, capillary electrophoresis for genomics, and microscale instrumentation for quantitative determinations.

**CHEM.526 Analytical Separations (3)**

Prerequisites: CHEM.420 and 422 or the equivalent. This course focuses on chromatographic and electrophoretic separations. Topics include general plate theory, the principles and optimization of gas chromatography, liquid chromatography, supercritical fluid chromatography and capillary electrophoresis, and the principles of the detection systems utilized in these separation techniques.

**CHEM.527 Analytical Spectroscopy (3)**

Prerequisites: CHEM.420 and 422 or the equivalent. Aspects of modern analytical spectroscopy. Individual topics include: general theory of spectroscopy, plasma emission spectroscopy, atomic absorption spectroscopy, nuclear magnetic resonance, X-ray spectroscopy, surface techniques, radiometric analysis, Fourier transform spectroscopy, laser spectroscopy, mass spectrometry, computers in analytical spectroscopy, and applications to life science.

**CHEM.529 Special Topics in Analytical Chemistry (3)**

Prerequisite: Permission of the Instructor. Scheduling in a given semester depends on the availability of an instructor and anticipated enrollment.

**CHEM.533 Advanced Physical Chemistry (3)**

Prerequisite: Undergraduate physical chemistry. Quantum chemistry and spectroscopy for beginning graduate students.

**CHEM 534: Advanced Thermodynamics (3)**

The subject matter of this course entails advanced chemical thermodynamics. The four laws are recalled from Modern Thermodynamic perspective. The major component of the course is Statistical Thermodynamics where the four laws are restated from microscopic point of view. Statistical interpretation of equilibrium constant is given. Finally, laws related to the workings of far-from-equilibrium systems are summarized using Prigogine's minimum entropy production principle.

**CHEM.535 Elements of Surface and Colloid Science (3)**

Prerequisites: CHEM.333 and 334 or the equivalent. The chemical properties of interfaces will be the main focus of this course. Chemistry of gas-liquid, solid-gas, and solid-liquid interfaces will be discussed with emphasis on thermodynamic descriptions. Industrial applications of interfacial processes will also be discussed.

**CHEM.539 Special Topics in Physical Chemistry (3)**

Prerequisite: Permission of the Instructor. Scheduling in a given semester depends on the availability of an instructor and anticipated enrollment.

**CHEM.540 Advanced Organic Chemistry (3)**

Described above. May also count for *Analytical and Physical Methods* credit.

**Other Courses****CHEM.518 Introduction to Inorganic Research (1-3)**

Prerequisite: Permission of the Instructor. Advanced laboratory in experimental inorganic chemistry individually planned to afford opportunities for special training. Serves as an introduction to research in inorganic chemistry. (Offered every semester.)

**CHEM.523 Chemical Sensors (3)**

Prerequisite: CHEM.420. This course is designed to introduce the fundamentals of sensors and to discuss sensor development and applications. Topic to be covered include: optodes, ion selective electrodes, amperometric sensors, optical sensors, biosensors, and miniaturized sensors. (Offered every other year.)

**CHEM.528 Introduction to Analytical Research (1-3)**

Prerequisite: Permission of the Instructor. Advanced laboratory individually planned to afford opportunities for special training, or as an introduction to research in analytical chemistry. (Offered every semester.)

**CHEM.537 Computational Chemistry (3)**

Prerequisite: Physical Chemistry I and II. A description of the theory and practice of computational methods used in modern chemical research. Students gain knowledge of computational methods through classroom instruction and semester-long projects focused on systems of their choice. Molecular calculations are performed on a supercomputer. (Offered alternating years.)

**CHEM.538 Introduction to Physical Research (1-3)**

Prerequisite: Permission of Instructor. Advanced laboratory individually planned to afford opportunities for special training, or as an introduction to research in physical chemistry. (Offered every semester.)

**CHEM.548 Introduction to Organic Research (1-3)**

Prerequisite: Permission of the Instructor. Advanced laboratory individually planned to afford opportunities for special training, or as an introduction to research in organic chemistry. (Offered every semester.)

**CHEM.591 Research Seminar (0-1)**

Registration required of full-time graduate students during regular sessions when the course is offered. Applicants for the M.S. (Research) degree may accumulate a maximum of three semester hours toward that degree. (Offered every Fall and Spring semester.)

**CHEM.595 Special Study for Examinations (0)****CHEM.596 Essay Guidance (0-3)****CHEM.597 Research Topics (1-3)**

Prior permission of guiding professor required.

**CHEM.598 Graduate Reading Course (1-3)**

Prior permission of guiding professor and department chairperson required.

**CHEM.599 Thesis Research (0-6)****CHEM.5CR.90 Master's Degree Study (0)****CHEM.618 Methods in Inorganic Research (3)**

This course will introduce students to the most current research methods in modern inorganic chemistry. Students will learn the theory behind the methods but will also get hands-on experience by using these methods to collect, analyze, and interpret data in order to solve a particular problem in inorganic chemistry. (Offered every semester.)

**CHEM.619 Advanced Inorganic Research (3)**

This course will require students to search and critically analyze the inorganic chemistry literature, formulate a problem in experimental and/or theoretical inorganic chemistry to be addressed, and apply a research methodology to address the problem. (Offered every semester.)

**CHEM.628 Methods in Analytical Research (3)**

This course will introduce students to the most current research methods in modern analytical chemistry. Students will learn the theory behind the methods but will also get hands-on experience by using these methods to collect, analyze, and interpret data in order to solve a particular problem in analytical chemistry. (Offered every semester.)

**CHEM.629 Advanced Analytical Research (3)**

This course will require students to search and critically analyze the analytical chemistry literature, formulate a problem in experimental and/or theoretical analytical chemistry to be addressed, and apply a research methodology to address the problem. (Offered every semester.)

**CHEM.638 Methods in Physical Research (3)**

This course will introduce students to the most current research methods in modern physical chemistry. Students will learn the theory behind the methods but will also get hands-on experience by using these methods to collect, analyze, and interpret data in order to solve a particular problem in physical chemistry. (Offered every semester.)

**CHEM.639 Advanced Physical Research (3)**

This course will require students to search and critically analyze the physical chemistry literature, formulate a problem in experimental and/or theoretical physical chemistry to be addressed, and apply a research methodology to address the problem. (Offered every semester.)

**CHEM.648 Methods in Organic Research (3)**

This course will introduce students to the most current research methods in modern organic chemistry. Students will learn the theory behind the methods but will also get hands-on experience by using these methods to collect, analyze, and interpret data in order to solve a particular problem in organic chemistry. (Offered every semester.)

**CHEM.649 Advanced Organic Research (3)**

This course will require students to search and critically analyze the organic chemistry literature, formulate a problem in experimental and/or theoretical organic chemistry to be addressed, and apply a research methodology to address the problem. (Offered every semester.)

**CHEM.690 Introduction to Proposal Writing and Oral Presentations (3)**

This course will introduce students to the complex process of proposal writing and the art of preparing and presenting effective oral presentations. (Offered every semester.)

**CHEM.691 Research Seminar (0-1)**

Each semester, invited speakers from research programs in both academia and industry will give presentations on their work, and PhD students will be expected to attend and engage in discussions with the speakers. (Offered every semester.)

**CHEM.699 Dissertation Research (0-12)**

This course involves an experimental or theoretical research project chosen and completed under the guidance of a graduate faculty mentor. A dissertation must be written and orally defended. (Offered every semester.)

## COMMUNICATION

**Kevin Wright, Ph.D.,**

*Department Chairperson*

**April Trees, Ph.D.,**

*Graduate Program Director*

The Department of Communication offers Master of Arts and Master of Arts (Research) degrees for students interested in culture and public dialogue, media studies, and organizational communication. Both degrees provide a solid foundation of theory, research, and ethical sensitivity in helping students apply communication skills, but the program's focus is not on skill development. Working professionals and those seeking careers as organizational practitioners will be more attracted to the M.A. degree, while students anticipating research-based careers or who might progress to doctoral programs should consider the M.A.(R) degree.

The M.A. degree consists of 30 semester hours of coursework plus comprehensive written and oral examinations. The M.A.(R) degree consists of 24 semester hours of coursework plus a Master's thesis (six semester hours of CMM.599, Thesis Research) and a final oral examination. The department requires all students to take at least 21 hours of graduate-level courses in Communication, including 9 hours of required courses. For their additional coursework, students may choose up to a total of nine hours in the following areas: 400-level courses in Communication, graduate coursework outside of the department, or independent studies. Unless circumstances mandate no more than six of these nine hours may be taken in 400-level courses in Communication or graduate coursework outside of the department. No more than three of these hours may be taken as independent studies.

## Master of Arts

### Prerequisites

Undergraduate Communication degree or a degree in a related discipline with possible prerequisites in Communication theory and research.

### Required Courses

CMM.500 Graduate Study of Communication;  
CMM.502 Research Methods in Communication;  
CMM.504 Reading Foundations in Communication Theory

### Additional Requirements

Final written and oral degree examinations.

*A formal minor is not permitted.*

## Master of Arts (Research)

**Prerequisites**

Undergraduate Communication degree or a degree in a related discipline with possible prerequisites in Communication theory and research.

**Required Courses**

CMM.500 Graduate Study of Communication;  
CMM.502 Research Methods in Communication;  
CMM.504 Reading Foundations in Communication Theory

**Additional Requirements**

An additional research methods course is strongly recommended.

A final oral defense of the thesis.

*A formal minor is not permitted.*

## Certificate Programs

A Certificate in Organizational Development is available for students interested in developing expertise in how to improve organizational effectiveness. An interdisciplinary program with Communication, Educational Leadership, Psychology, and Public Policy Analysis, the certificate is designed to serve the needs of current and future professionals in government, business, education and non-profits, and educate them to stimulate, guide, and evaluate change and development within their respective organizations. Requirements are outlined on the Public Policy Studies graduate catalog page.

A Certificate in Rhetoric and Composition Studies is available for students interested in additional, interdisciplinary study of rhetorical theory and writing pedagogy. Requirements are outlined on the graduate catalog page for certificate programs.

**COURSE DESCRIPTIONS****Upper-Division Courses**

CMM.400 Family Communication (3)  
CMM.409 Theories of Persuasion (3)  
CMM.410 Multiplatform Journalism (3)  
CMM.416 Editing (3)  
CMM.420 Leadership and Teams (3)  
CMM.421 Organizational Culture (3)  
CMM.422 Conflict, Mediation and Negotiation (3)  
CMM.424 Training and Development (3)  
CMM.430 Gender and Communication (3)  
CMM.432 Communicating Across Racial Divisions (3)  
CMM.435 Stereotyping and Bias in the Mass Media (3)  
CMM.440 Mass Communication and Society (3)  
CMM.441 Critical Perspectives on Journalism (3)  
CMM.442 Theory of Free Expression (3)  
CMM.443 Culture, Technology, and Communication (3)  
CMM.444 History of Journalism (3)  
CMM.447 Rhetoric of Political Campaigns (3)  
CMM.460 Integrated Communication Campaigns (3)  
CMM.464 Public Relations Case Studies (3)  
CMM.465 International Public Relations (3)  
CMM.470 Advertising Research and Strategic Planning (3)  
CMM.472 American Advertising Federation Competition (3)  
CMM.481 Digital Storytelling

**Graduate Courses**

CMM.500 Graduate Study of Communication (3)

An introduction to both the responsibilities and skills required of graduate students in Communication and to the perspectives and theories that guide the study of the communication processes in interpersonal, small group, organizational, intercultural, and mass communication contexts. (Offered every Fall semester.)

**CMM.502 Research Methods in Communication (3)**

An introduction to the research process in the study of communication. Emphasis is on formulating research questions, methods of data collection, data management, and data analysis to help students become more skillful researchers and more knowledgeable interpreters of others' research. (Offered every Spring semester.)

**CMM.504 Reading Foundations in Communication Theory (3)**

Engages students in a multitheoretical examination of the communication process through the reading, written analysis, and discussion of books of historical importance in the discipline. (Offered every Fall semester.)

**CMM.506 Contemporary Theories in Communication (3)**

Provides students the opportunity to read, analyze, and discuss contemporary literature in communication theory that is influencing the discipline. Emphasizes readings of a broadly cultural orientation as well as established social science approaches to communication. (Offered occasionally.)

**CMM.510 Studies in Mass Media (3)**

Explores the theoretical and methodological differences between behavioral, cognitive, and cultural approaches to mass media. Discusses recurring issues in the history of media research, such as debates over the media's political and social influence, audience uses of the media, and media and social policy. (Offered occasionally.)

**CMM.514 Culture and Public Dialogue (3)**

Study of the theory and practice of dialogue in public and private, cultural and intercultural settings. Students will understand major theorists of dialogue, and analyze actual attempts at dialogic communication in especially difficult contexts involving conflict, prejudice, and political ideologies. (Offered occasionally.)

**CMM.518 Organizational Communication (3)**

Advanced study of formal and informal communication in the organizational context. Students review, discuss, and critique research and theory in organizational communication with the goal of conducting a limited research project. Theoretical approaches covered in this course include classical, human relations, human resources, systems, cultural, critical, postmodern, and feminist theories. (Offered every year.)

**CMM.520 Communication Ethics (3)**

The use of lectures, discussions, and case studies to stimulate the moral imagination, facilitate the recognition of moral issues, develop analytical skills, and increase tolerance for differing points of view. (Offered occasionally.)

**CMM.522 Rhetorical Theory and Criticism (3)**

The critical analysis of public discourse, including speeches, written works, social movements, and forms of popular culture. Students will discuss rhetorical criticism as a perspective and a method. (Offered occasionally.)

**CMM.524 Language and Cultural Diversity (3)**

This course introduces students to the study of language and provides an opportunity to examine how language influences culture and culture influences language. Through the study of language in cultural contexts, students will better understand the significance that language and communication have in the construction of culture. (Offered occasionally.)

**CMM.525 Foundations of Journalism (3)**

Explores the history of American journalism as a social institution. Among the topics covered will be the role of journalism in public life, the origins of professionalism and objectivity, the bureaucratic structure of news organizations, group conflicts over press freedom, and the nature of news as a symbolic world. (Offered occasionally.)

**CMM.526 Interpersonal Communication (3)**

Advanced study of human communication processes in dyadic and small group relationships. Application of related communication theory to the analysis of relational interaction across contexts. Study of "the self and the

other” as a communication system. Individual research required. (Offered every other year.)

**CMM.535 Advanced Research Methods (3)**

Introduces students to methods commonly used by scholars in the humanities and social sciences to study communication, cultural texts, and practices. (Offered occasionally.)

**CMM.562 Philosophy of Communication (3)**

Explores philosophical issues and theoretical perspectives that inform the study of communication, including discussions of humanness, language, and ways of knowing. Individual research required. (Offered occasionally.)

**CMM.593 Special Topics (3)**

**CMM.595 Special Study for Examinations (0)**

**CMM.598 Graduate Reading Course (1-3)**

Investigation of a specific and focused problem in communication, to be conducted with the supervision of a full-time faculty member in Communication. Prior permission of sponsoring professor and department chairperson required.

**CMM.599 Thesis Research (0-6)**

**CMM.5CR.90 Master’s Degree Study (0)**

## **COMMUNICATION SCIENCES AND DISORDERS**

**Travis T. Threats, Ph.D.,**

*Department Chairperson*

**Pat D. Miller, M.S.,**

*Director of the Graduate Program*

The graduate program in the Department of Communication Sciences and Disorders offers both Master of Arts and Master of Arts (Research) degrees with an area of emphasis in speech-language pathology. The Department’s program is accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association (ASHA). The academic objective of the program is to prepare professionals with the expertise to provide quality clinical services in speech, language, communicative and swallowing disorders. A major focus of the program is to develop clinicians who are prepared to serve culturally and linguistically diverse populations across the life span. The graduate program consists of 40 semester-hours of academic credit plus successful completion of five zero-credit hour clinical practica (one taken each semester) and six credit hours in a student teaching and medically based clinical internship during the last semester of the program.

### **Master of Arts**

**Prerequisites**

General educational background in areas such as the humanities, arts, sciences, communication arts, education, modern language, research methodology, psychology, and sociology is required. Undergraduate major or equivalent in

coursework related to speech, language, and hearing science, development, and disorders.

**Required Courses**

CSDI.505 Experimental Design

CSDI.545 Phonological Development and Disorders

CSDI.551 Assessment/Management of Social Communication Disorders

CSDI.553 Augmentative and Alternative Communication

CSDI.555 Language I

CSDI.556 Language II

CSDI.560 Fluency Disorders

CSDI.563 Dysphagia

CSDI.570 Voice Disorders

CSDI.571 Cleft Palate and Craniofacial Anomalies

CSDI.572 Neurogenic Communicative Disorders in Adults

CSDI.576 Motor Speech Disorders

CSDI.577 Assessment and Management of

Communication Disorders in Multicultural Populations

CSDI.580 Professional Issues in Speech-Language

Pathology and Audiology

CSDI.582 Cognitive Communication Disorders.

**Additional Requirements**

CSDI.501 Clinical Practicum

CSDI.503 Student Teaching in Communication Disorders

CSDI.594 Clinical Internship

Students must enroll in five terms (semester or summer) of zero-credit-hour Clinical Practicum during their graduate study. Additionally, six credit hours of off-campus clinical practice is completed during the last semester of study, typically involving three credit hours of Student Teaching and three credit hours of Clinical Internship.

Total semester-hours required: 46 credit hours (36 credit hours of required coursework, four credit hours of elective coursework and six credits of clinical practice)

*A formal minor is not permitted.*

### **Master of Arts (Research)**

**Prerequisites**

General educational background in areas such as the humanities, arts, sciences, communication arts, education, modern language, research methodology, psychology, and sociology is required. Undergraduate major or equivalent in coursework related to speech, language, and hearing science, development, and disorders.

**Required Courses**

Courses cited as required coursework for the non-research M.A. degree (36 credit hours) and CSDI 599 Thesis Research for 6 credit hours. Total semester-hours required: 48 credit hours (42 credit hours of required coursework and six credits of clinical practice).

*A formal minor is not permitted.*

**Course Descriptions**

**Upper-Division Courses**

- CSDL400 Survey of Speech Disorders (2)**  
**CSDL410 Survey of Language Disorders (2)**  
**CSDL420 Audiology: Basic Audiometry (3)**  
**CSDL430 Clinical Methods (3)**  
**CSDL435 Clinical Observation (0)**  
**CSDL440 Aural Rehabilitation (3)**  
**CSDL450 Neurological Bases of Communication (3)**

**Graduate Courses**

**CSDL501 Clinical Practicum (0)**  
 Prerequisite: Documentation of 25 clinical observation hours. Supervised experience in clinical practicum. Laboratory required. (Offered every semester.)

**CSDL503 Student Teaching in Communication Disorders (3-5)**  
 Prerequisite: CSDL501 Supervised experience in a school program. Laboratory required. (Offered every semester.)

**CSDL505 Experimental Design (2)**  
 Prerequisite: Statistics is recommended This course is designed to assist graduate students in reading, understanding and critically evaluating research in speech-language pathology. Aids students in developing, designing and writing their own experimental and clinical research proposals. (Offered every fall semester.)

**CSDL544 Linguistics (2)**  
 Advanced clinical application of linguistic theories of language development. (Offered every spring semester.)

**CSDL545 Phonological Development and Disorders (2)**  
 A study of theories of phonological development and disorders and current diagnostic and therapeutic techniques. (Offered every fall.)

**CSDL551 Assessment/Management of Social Communication Disorders (2)**  
 Social skills are integrally intertwined with communication skills and are essential for academic and professional success. This course includes discussions of the neurological bases, environmental factors, early connections to language/literacy, and communication disorders that may demonstrate difficulties in social communication. Assessment and management strategies will be demonstrated and described. (Offered every summer.)

**CSDL553 Augmentative and Alternative Communication (2)**  
 An overview of augmentative and alternative communication modes, techniques and symbol systems, as well as assessment and intervention strategies. (Offered every summer.)

**CSDL555 Language I (3)**  
 A focus on theoretically-based functional practices in the assessment and intervention of language disorders in children from birth to eight years. (Offered every fall semester.)

**CSDL556 Language II (3)**  
 A focus on theoretically-based functional practices in the assessment and intervention of language-learning disorders in school-age children and youth. (Offered every spring semester.)

**CSDL560 Fluency Disorders (3)**  
 An overview of normal fluency and exploration of fluency disorders. Specific focus on the nature, assessment, and treatment of stuttering. (Offered every fall.)

**CSDL563 Dysphagia (3)**  
 Prerequisite: CSDL475 or permission of instructor. A study of the anatomy, physiology, evaluation and treatment of swallowing and associated disorders. (Offered every spring semester.)

**CSDL565 Clinical Supervision: Practices, Issues and Choices (2)**  
 Prerequisite: CSDL501 or permission of instructor. An overview of theoretical models of supervision with primary emphasis on practical application of principles and strategies. Legal, ethical and professional standards, methods of

evaluating self and other's performance, and managing difficult supervision situations will be explored. (Offered occasionally.)

**CSDL570 Voice Disorders (3)**  
 A study of research in areas of voice science and pathology and development of advanced techniques in the assessment and treatment of voice disorders. Laboratory required. (Offered every fall semester.)

**CSDL571 Cleft Palate and Craniofacial Anomalies (2)**  
 A study of the nature, etiology, physiological and psychological aspects and ramifications of cleft palate. (Offered every summer.)

**CSDL572 Neurogenic Communicative Disorders in Adults (3)**  
 Prerequisite: CSDL475 or permission of instructor. A study of the nature, etiology, physiological and psychological aspects of aphasia and motor speech disorders. (Offered every Fall semester.)

**CSDL573 Neuropathologies in Children (2)**  
 A study of the nature of development and acquired neuropathologies in children and their impact on communication. (Offered occasionally.)

**CSDL576 Motor Speech Disorders (3)**  
 Prerequisites: CSDL475 or permission of instructor. A study of the nature, etiology, physiological and psychological aspects of acquired motor speech disorders. (Offered every spring semester.)

**CSDL577 Assessment and Management of Communication Disorders in Multicultural Populations (2)**  
 Prerequisites: CSDL470. Issues and methodologies in definition, diagnosis and treatment of communication disorders of persons from culturally and linguistically diverse backgrounds. (Offered every spring semester.)

**CSDL580 Professional Issues in Speech-Language Pathology (1)**  
 This course focuses on the business, legal and ethical issues that impinge on clinical practice in speech-language pathology. Emphasis is placed on the administrative aspects of service delivery pertaining to private practice, clinics and hospital-based programs. (Offered every spring semester.)

**CSDL582 Cognitive Communication Disorders (3)**  
 Prerequisites: CSDL475 or permission of instructor. A study of the etiology, diagnosis, and treatment of cognitive communication disorders due to traumatic brain injury and dementia. (Offered every fall semester.)

**CSDL588 Advanced Audiology (2)**  
 Prerequisite: CSDL440 or permission of the instructor. A study of pediatric audiology, electrophysiology measures, behavioral hearing assessment related to development level, immittance audiometry and testing for auditory processing disorders. (Offered every spring semester.)

**CSDL589 Institute in Communication Disorders (1-3)**  
 Various topics in the field. (Offered every summer.)

**CSDL593 Special Topics (1-3)**

**CSDL594 Clinical Internship (3)**  
 Prerequisites: CSDL501 or permission of instructor. A required course taken in the last semester of the program involving full-time clinical placement in an off-campus site. Emphasis of this course is the integration of academic knowledge and clinical skills in a professional setting. (Offered every semester.)

**CSDL595 Special Study for Examinations (0)**

**CSDL596 Essay/Project Guidance (0)**

**CSDL598 Graduate Readings (1-3)**  
 Permission of Instructor or department chair required.

**CSDL599 Thesis Research (0-6)**  
 Permission of department chair required.

**CSDL5CR.90 Master's Degree Study (0)**

# EARTH AND ATMOSPHERIC SCIENCES

**William P. Dannevik, Ph.D.,**  
*Department Chairperson*

## Geoscience

**Robert B Herrmann, Ph.D.,**  
*Graduate Program Director*

The Geoscience section of the Department of Earth and Atmospheric Sciences offers graduate programs leading to the degrees of Master of Science and Master of Science (Research) in geoscience and, Doctor of Philosophy in geophysics. Students with undergraduate degrees in geology, geophysics, physics, mathematics, or engineering are encouraged to apply to these programs. Active research areas in geophysics include earthquake seismology, tectonics, gravimetry and physics of the deep interior. Active research areas in geology include tectonics, remote sensing, sedimentary geology and sedimentation, igneous and metamorphic petrology, geochemistry, geochronology, geomorphology and fluid-rock interaction. Research facilities include a network of seismograph stations surrounding the New Madrid fault zone, state-of-the-art seismic observatories which transmit data by satellite from sites distributed across a broad region of the central United States, high performance computing clusters, rock preparation and mineral separation facilities, a large format stream table, stable isotope geochemistry lab, and an environmental imaging lab.

### Required Core Courses (Geoscience Section; All Degrees)

EAS.450 Scientific Communications;  
EAS.437 Earth Dynamics, or  
EAS.506 Physics of the Solid Earth;  
EAS.519 Seminar in Geosciences, or  
EAS.539 Seminar in Geophysics.  
EAS.517 Divergent and Convergent Margins, or EAS.518  
Transform margins and Plate Interiors.  
EAS.591 Geoscience Journal Club (each semester in  
residence) Master's students must register for at least one  
semester for one credit hour. PhD students must register for at  
least two semesters for one credit hour each semester.

## Master of Science Master of Science (Research)

The Master of Science, coursework option, requires a minimum of 33 semester-hours of course work and independent study.

The Master of Science (Research) requires a minimum of 24 semester-hours of course work plus a written thesis with 6 hours of thesis credit.

The master's program has two options: geology and Geophysics.

### Prerequisites (Geology Option)

Mineralogy, petrology, sedimentology, and structural geology. One year each of calculus, physics, and chemistry is highly desirable.

### Required Courses (Geology Option)

Core courses listed previously, plus  
EAS.517 Divergent and Convergent Margins, and  
EAS.518 Transform Margins and Plate Interiors.

### Prerequisites (Geophysics Option)

Structural geology, college physics, classical mechanics, and mathematics through differential equations.

### Required Courses (Geophysics Option)

Core courses listed previously, plus two courses from  
EAS.504 Potential Theory, EAS.540 Continuum Mechanics  
and EAS.551-552 Seismic Exploration, Methods-Laboratory.

### Additional Requirements (Both Options)

EAS.588 Independent Study; and additional courses to satisfy the minimum credits required.  
*A formal minor is not permitted.*

## Doctor of Philosophy (Geophysics)

### Prerequisites

Structural geology, college physics, and mathematics through differential equations.

### Required Courses

Core courses listed previously, plus  
Students in Seismology must take  
EAS.539 Seminar in Seismology  
EAS. 631 Advanced Seismology I  
EAS.632 Advanced Seismology II  
When the doctorate is pursued directly from the baccalaureate, a minimum of 48 semester-hours of coursework is required in preparation for the research-phase.  
*A formal minor is not permitted.*

## Meteorology

**Charles E. Graves, Ph.D.,**  
*Graduate Program Director*

Meteorologists study the dynamics of air motion, physical processes such as transfer of radiation, and convection

resulting in severe storms, flash floods, and hurricanes. During the past few decades progress has been made in atmospheric sciences in developing systems to observe the current state of the atmosphere and in using those observations in improved computer models for prediction. The atmosphere is also the centerpiece of the interconnected, interactive global environmental system within which life thrives. Current research efforts include the study of heavy precipitation, regional climate, and air quality using numerical weather prediction models. Faculty collaborate with research meteorologists at national centers as well as operational meteorologists at local National Weather Service forecast offices.

The Department is a charter member of the University Corporation for Atmospheric Research (UCAR) which manages the National Center for Atmospheric Research, Boulder, Colorado, under the sponsorship of the National Science Foundation. External funding for research comes from the National Oceanic and Atmospheric Administration (NOAA), the National Weather Service, and the National Aeronautics and Space Administration (NASA). The department has a dedicated synoptic computer lab and receives real-time data from both satellite downlink and the Internet.

Software for displaying and analyzing weather data comes from Unidata Program Center, the National Weather Service, and locally written code.

## Master in Professional Meteorology

### Prerequisite

An undergraduate degree in meteorology or a related field.

### Required Courses

A maximum of nine credit-hours selected from the following:

EAS.420 Synoptic Meteorology I;  
 EAS.422 Synoptic Meteorology II;  
 EAS.423 Micrometeorology;  
 EAS.433 Physical Meteorology I;  
 EAS.434 Physical Meteorology II;  
 EAS.444 Principles of Dynamic Meteorology I;  
 EAS.445 Principles of Dynamic Meteorology II;  
 EAS.550 Atmospheric Processes and Applications; and  
 EAS.589 Research Seminar.

A minimum of two courses each in dynamic, general, and physical meteorology.

### Additional Requirement

Proficiency in Fortran or similar computer programming language.

Total credit-hours required: 33.

*A formal minor is not permitted.*

## Master of Science (Research)

### Prerequisite

An undergraduate degree in meteorology or a related field.

### Required Courses

A maximum of nine credit-hours selected from the following:

EAS.420 Synoptic Meteorology I;  
 EAS.422 Synoptic Meteorology II;  
 EAS.423 Micrometeorology;  
 EAS.433 Physical Meteorology I;  
 EAS.434 Physical Meteorology II;  
 EAS.444 Principles of Dynamic Meteorology I;  
 EAS.445 Principles of Dynamic Meteorology II; and  
 EAS.550 Atmospheric Processes and Applications.

A minimum of two courses each in dynamic, general, and physical meteorology.

### Additional Requirement

Proficiency in Fortran or similar computer programming language.

*A formal minor is not permitted.*

## Doctor of Philosophy

### Prerequisite

An undergraduate area of concentration in meteorology.

### Required Courses

A maximum of nine semester-hours selected from the following:

EAS.420 Synoptic Meteorology I;  
 EAS.422 Synoptic Meteorology II;  
 EAS.423 Micrometeorology;  
 EAS.433 Physical Meteorology I;  
 EAS.434 Physical Meteorology II;  
 EAS.444 Principles of Dynamic Meteorology I;  
 EAS.445 Principles of Dynamic Meteorology II; and  
 EAS.550 Atmospheric Processes and Applications.

A minimum of two courses each in dynamic, general, and physical meteorology.

### Additional Requirement

Proficiency in Fortran or similar computer programming language. Total pre-research-phase semester-hours required: 30 beyond Master's degree.

*A formal minor is not permitted.*

The doctorate may be pursued directly from the baccalaureate with the permission of the Program Director.

## COURSE DESCRIPTIONS

### Upper-Division Courses

EAS.405 Petrology (3)

EAS.406 Petrology Laboratory (1)

EAS.410 Sedimentology and Stratigraphy (3)



**EAS.418 Stratigraphy (3)**  
**EAS.419 Petroleum Geology (3)**  
**EAS.420 Synoptic Meteorology I (3)**  
**EAS.422 Synoptic Meteorology II (3)**  
**EAS.423 Micrometeorology (3)**  
**EAS.427 Environmental Geophysics (3)**  
**EAS.428 Environmental Geochemistry (3)**  
**EAS.430 Structural Geology (4)**  
**EAS.433 Physical Meteorology I (3)**  
**EAS.434 Physical Meteorology II (3)**  
**EAS.435 Groundwater Hydrology (3)**  
**EAS.437 Earth Dynamics (3)**  
**EAS.440 Engineering Geology (3)**  
**EAS.444 Principles of Dynamic Meteorology I(3)**  
**EAS.445 Principles of Dynamic Meteorology II (3)**  
**EAS.450 Scientific Communications (2)**  
**EAS.451 Principles of Seismic Exploration (2)**  
**EAS.452 Seismic Exploration Laboratory (1)**  
**EAS.453 Principles of Electrical Exploration (3)**  
**EAS.455 Principles of Gravity and Magnetic Exploration (4)**  
**EAS.460 Introduction to the Physics of the Solid Earth (3)**  
**EAS.462 Introduction to Earthquake Seismology (3)**  
**EAS.472 Seismological Instrumentation (3)**  
**EAS.475 Introduction to Geomagnetism (3)**

## Graduate Courses

**EAS.504 Potential Theory (3)**  
 Laplace's equation and the Dirichlet, Neumann and mixed boundary value problems. Methods of solution studied include separation of variables, conformal mapping, and integral transforms. (Offered every Fall semester.)

**EAS.506 Physics of Solid Earth (3)**  
 Prerequisites: MATH.244. Structure and processes in the earth's interior; composition, heat flow, rheology, and geomagnetism. (Offer as needed.)

**EAS.512 Time Series Analysis in Geophysics (3)**  
 Fourier transform, Fourier series, discrete Fourier transform, fast Fourier transform, digital filtering. Applications to Geophysics. (Offered occasionally.)

**EAS.515 Properties of Earth Materials (3)**  
 This course gives a survey of the physical and chemical properties of geological materials. The course covers: physical properties of minerals and rocks; chemical properties of minerals and rocks; seismic and thermal parameters of the lithosphere and mantle; properties of surface fluids and loose aggregate materials. (Offered every other year.)

**EAS.517 Divergent and Convergent Margins (3)**  
 Prerequisite: EAS.437 or equivalent. This course in an in-depth, integrative examination into the geology and geophysics of divergent and convergent margins. Subject matter includes the physiography, petrology, geochemistry, sedimentology, seismic surveys, and seismology of margins. Laboratory exercises, take-home assignments, classroom presentations and paper are an integral part of the course. (Offered every other year.)

**EAS.518 Transform Margins and Plate Interiors (3)**  
 Prerequisite: EAS.437 or equivalent. This course in an in-depth, integrative examination into the geology and geophysics of transform margins and plate interiors. Subject matter includes the physiography, petrology, geochemistry, sedimentology, seismic surveys, and seismology of margins and plate interiors. Laboratory exercises, take-home assignments, classroom presentations and paper are an integral part of the course. (Offered every other year.)

**EAS.519 Seminar in Geoscience (2)**  
 In-depth study of recent research developments in geophysics. (This seminar or EAS.539 is offered every semester.)

**EAS.520 Numerical Methods of Prediction (3)**  
 Study of the concepts of dynamic meteorology underlying numerical weather prediction models, the development of the single and multi-level models and their applications. Climate modeling. (Offered during the Summer Session.)

**EAS.522 Geophysical Data Processing (3)**  
 Prerequisite: EAS.451. Modern digital data processing methods used in geophysics, based on Fourier and Z transforms. Topics include correlation, spectral analysis, and digital filters, with application to earthquake seismology, seismic, gravity, and magnetic exploration. (Offered occasionally.)

**EAS.523 Boundary Layer Meteorology (3)**  
 Comprehensive treatment of the Navier Stokes equations – development and solutions. Discussions of the three-dimensional modeling of the planetary boundary layer, the accompanying turbulence theory, and marine boundary layers. (Offered every other Fall semester.)

**EAS.524 Tropical Meteorology (3)**  
 Study of the fundamentals of circulation in the tropics, the importance of sea air interaction, convection processes, monsoons, energy transfer and hurricanes. (Offered every Spring semester.)

**EAS.526 Synoptics and Dynamics of Jet Streams (3)**  
 The dynamic concepts useful in jet stream meteorology; methods of measuring various parameters in the free atmosphere; discussion of laboratory and computing models as they relate to planetary jet streams. (Offered occasionally.)

**EAS.527 Meteorology of Severe Storms (3)**  
 Comprehensive treatment of the synoptic and mesoscale meteorological aspects and the mechanics of thunderstorms, tornadoes and downbursts. (Offered every other Fall semester.)

**EAS.528 Diagnosis and Prediction of Severe Storms (3)**  
 Emphasis is placed on the development of short term (1-6 hours) forecasting techniques for severe storms. Topics include: instability mechanisms, severe storm structure and types, sounding analysis, low level jet inversion wind maxima, jet streak coupling, boundary layer thermal gradients, satellite/radar signatures of severe convection, flash flood forecasting and statistical guidance. Case studies of severe weather are discussed in class. (Offered every other spring semester.)

**EAS.529 Mesometeorology (3)**  
 Comprehensive synoptic and theoretical discussion of mesoscale meteorological events, thermally induced circulations and nonconvective circulations. (Offered occasionally.)

**EAS.534 Cloud Physics (3)**  
 Microphysics of warm and cold clouds, including diffusion, collision-coalescence, riming and aggregate processes. (Offered occasionally.)

**EAS.536 Principles of Radiative Transfer (3)**  
 Concepts of transfer of solar and terrestrial radiation in the earth-atmosphere system studied on the basis of an introduction to precision radiometry. Topics include atmospheric turbidity, radiative transfer in cloudless and cloudy atmospheres, heat budget, role of radiative energy exchange in weather processes. (Offered every other Fall semester.)

**EAS.538 Statistical Methods in Meteorology (3)**  
 Examines many of the statistical methods used in meteorology; in particular, the course covers standard statistical testing, model output statistics, ensemble forecasting, forecast verification, and principle component analysis (empirical orthogonal functions). (Offered occasionally.)

**EAS.539 Seminar in Seismology (2)**  
 In depth study of recent research developments or specific topics not covered in formal courses. (This seminar or EAS.519 is offered every semester.)

**EAS.540 Continuum Mechanics in Wave Propagation (3)**  
 Prerequisite: Differential Equations, Classical Physics. Concepts of continua, tensor analysis, stress deformation, and elasticity will be covered in detail. Other constitutive relations used to describe deformation in real materials such as plasticity, viscoelasticity, materials testing, thermoelasticity, and several classical boundary value problems relevant to the geosciences will be presented. (Offered every Spring semester.)

**EAS.542 Advanced Structural Geology (2)**  
 Prerequisite: EAS.430 or equivalent. This course gives a survey of microstructures and mesoscale structures that are important for understanding

and deciphering the deformation history of deformed rocks. (Offered every other year.)

#### **EAS.543 Isotope Geochemistry (2)**

This course gives a survey of radiogenic and stable isotopic systems that are frequently used in the geosciences. The course covers: principles of isotopic decay; geochronology with emphasis on K/Ar, Rb/Sr, and U/Pb systems; thermochronology; and stable isotope geochemistry. (Offered every other year.)

#### **EAS.544 Advanced Sedimentary Geology (2)**

Prerequisite: EAS.310 or equivalent. A survey of clastic depositional systems and their facies, ranging from terrestrial systems to marginal-marine and deepmarine systems. Topics will include the occurrence of depositional systems within a sequence stratigraphic framework, and the storage and migration of hydrocarbons and groundwater in these depositional systems. (Offered every other year.)

#### **EAS.545 Advanced Petrology (2)**

Prerequisite: EAS.405, EAS.406, or equivalent. An introduction to modern geochemical theory and methods and their application to the igneous and metamorphic rocks. Emphasis will be on the major and trace element geochemistry of crust and mantle rocks, and the use of geothermometers and geobarometers in deciphering the pressure-temperature histories of rocks. (Offered every other year.)

#### **EAS.546 Geodynamics (3)**

Course focuses on the poorly understood, and hence controversial, large-scale processes and events that have affected the gross structure and chemistry of the Earth's mantle, crust, atmosphere, and biosphere. (Offered occasionally.)

#### **EAS.547 Turbulence (3)**

Prerequisites: MET.423 or equivalent. The main theoretical concepts of atmospheric turbulence, diffusion, evaporation and wind structure in the atmospheric boundary layer. (Offered every other Spring semester.)

#### **EAS.550 Atmospheric Processes and Applications (3)**

Advanced applications of convective, dynamic, radiative, synoptic and numerical meteorological principles to model atmospheric phenomena. (Offered every Spring semester.)

#### **EAS.551 Seismic Exploration Methods (2)**

Prerequisites: General Physics, MATH.143 and EAS.430 are recommended. EAS.452-552 should be taken concurrently. Exploration for natural resources using seismic waves; refraction and reflection methods and interpretation; elementary seismic data processing. (Offered every other year.)

#### **EAS.552 Seismic Exploration Laboratory (1)**

Prerequisites: EAS.451-551 or concurrent registration. Laboratory and field problems two hours per week. Collection and interpretation of seismic data; application of the computer to data interpretation. (Offered every other year.)

#### **EAS.554 Potential and Electrical Exploration Methods (3)**

Prerequisites: MATH.371 and PHYS.421. Earth's gravity, magnetic and natural electrical and electromagnetic fields; density and magnetic and electrical properties of rocks; gravity, magnetic and electrical methods of exploration. (Offered occasionally.)

#### **EAS.561 Satellite Meteorology (3)**

Prerequisite: MET.536 or equivalent. Satellite instrumentation; rectification, analysis and interpretation of satellite radiation measurements and cloud photographs; use of these data in the solution of specific meteorological problems. (Offered every other Fall semester.)

#### **EAS.565 Radar Meteorology (3)**

Fundamentals of a pulsed Doppler and non-Doppler radar. Velocity and range folding. Doppler radar display and signature interpretation. Characteristics of convective storms and severe weather signatures. (Offered every other Spring semester.)

#### **EAS.570 Convection in the Atmosphere (3)**

Derivation of consistent equations to study thermal convective phenomena in the atmosphere, the interaction between convective elements and their environments, simulation of thunderstorms and arrangement of convection. (Offered every other Fall semester.)

#### **EAS.572 Seismological Instrumentation (3)**

Prerequisite: MATH.351. Lecture two hours, laboratory one hour per week. Physical principles underlying design and operation of the seismograph. Selection of the seismograph for specific problems; calibration and response characteristics. Laboratory practice in assembly, installation and calibration of modern seismographs. (Offered in alternate years.)

#### **EAS.575 Land-Atmosphere Interaction (3)**

Prerequisites: CSCI.111; EAS.434. Principal physical and dynamic processes governing exchanges of mass and energy among soil, vegetation, bodies of water, and overlying atmosphere: precipitation, evapotranspiration, infiltration, snowmelt, and surface-runoff. Parameterization of these processes in numerical models over large tempo-spatial scales. (Offered every other year.)

#### **EAS.580 Synoptic-Mesoscale Circulations (3)**

Prerequisites: Must have completed at least one year of graduate study. Course will cover topics that are critical for understanding both large- and small-scale circulations in the atmosphere. Emphasis will be placed on developing a deep conceptual understanding and in-depth mathematical treatment of "balanced" vertical motions, quasi-geostrophic theory, Pettersen's development equation, the Sawyer-Eliassen ageostrophic circulation equations, jet streak dynamics, tropopause undulations, and isentropic potential vorticity concepts. (Offered every other Spring semester.)

#### **EAS.588 Independent Study (1-3)**

The Master's student undertakes an independent study of a chosen topic with the approval of sponsoring professor and the Program Director.

#### **EAS.591 Geoscience Journal Club (0-1)**

Registration in Journal Club is required every semester.

#### **EAS.593 Special Topics in Earth and Atmospheric Sciences (1-3)**

#### **EAS.595 Special Study for Examinations (0)**

#### **EAS.597 Research Topics (1-3)**

Prior permission of guiding professor and program director required.

#### **EAS.598 Graduate Reading Course (1-3)**

A critical evaluation of literature concerning a specific problem. Prior permission of guiding professor and program director required.

#### **EAS.599 Thesis Research (0-6)**

#### **EAS.5CR.90 Master's Degree Study (0)**

#### **EAS.610 Advanced Topics in Solid Earth Geophysics (3)**

Physics of the earth's interior; emphasis on current research problems. Topics from seismology, geology, heat flow, geomagnetism, and tectonophysics. (Offered occasionally.)

#### **EAS.619 Advanced Seminar in Geophysics (2)**

In-depth analysis of topics for Ph.D. students. (Offered occasionally.)

#### **EAS.620 Advanced Geomagnetism (3)**

Prerequisite: EAS.451. Lecture course on spherical harmonic analysis of the main magnetic field of the earth and of transient magnetic variations. Processes in the ionosphere relating to geomagnetism; topics in paleomagnetism and magnetohydrodynamics included. (Offered occasionally.)

#### **EAS.631 Advanced Seismology I (3)**

Prerequisite: EAS.540. The solution of the three-dimensional elastic wave equation in a whole sphere and plane layered half space will be developed using concepts of Green's functions, moment tensors, dislocation theory. Cagniard-de Hoop and wave number integration techniques will be introduced as complementary methods of solving the wave equation. (Offered every Fall semester.)

#### **EAS.632 Advanced Seismology II (3)**

Prerequisite: EAS.631. Wave propagation in a spherical earth is the focus of this course. Wave equation solutions using free oscillations, WKBJ ray theory and surface waves are developed. Modern techniques for wave propagation in

an earth with laterally varying media will be addressed. Theory for the inversion of seismic observations, e.g. free oscillation frequencies, surface wave dispersion or body wave travel times, for earth structure will be developed. (Offered every Spring semester.)

**EAS.648 General Circulation of the Atmosphere (3)**

The nature and theories of the atmospheric general circulation, the energy and momentum budget of the atmosphere and the numerical simulation of the atmospheric general circulation. (Offered occasionally.)

**EAS.659 Seminar in Numerical Methods of Atmospheric Sciences (3)**

Topics include the solution of linear algebraic systems, generalized Fourier Series methods of boundary-initial-value problems, finite difference solutions of partial differential equations and statistical techniques of geophysical data processing. Applications to problems of interest in the atmospheric sciences. (Offered occasionally.)

**EAS.688 Independent Study (1-3)**

The student undertakes an independent study of a chosen topic with the approval of a sponsoring professor and the Program Director.

**EAS.691 Geoscience Journal Club (0-1)**

Registration in Journal Club is required every semester.

**EAS.693 Special Topics in Earth and Atmospheric Sciences (1-3)**

**EAS.695 Special Study for Examinations (0)**

**EAS.697 Research Topics (1-3)**

Prior permission of guiding professor and program director required.

**EAS.698 Graduate Reading Course (1-3)**

Prior permission of guiding professor and program director required.

**EAS.699 Dissertation Research (0-6)**

**EAS.6CR.99 Doctor of Philosophy Degree Study (0)**

## ENGLISH

**Sara van den Berg, Ph.D.**

*Department Chairperson*

**Toby Benis, Ph.D.**

*Graduate Program Director*

The graduate program in the Department of English prepares students for scholarly work and professional careers in the study of language and literary texts written in English. The curriculum includes the study of culture, language, and the literature of England, North America, Ireland, Scotland, and the postcolonial world. Specialization in rhetoric and composition is also available. An essential component of the program is the study of literary theory; students also have the opportunity to undertake interdisciplinary work, including analysis of other literatures, cultures, and fields. The Department is committed to providing a curriculum that includes the full range of texts and methods important to the interpretation of literature and language, as well as offering students personalized instruction geared to their professional goals.

## Master of Arts

## Master of Arts (Research)

### Prerequisites

B.A. degree in English or 18 credit-hours of upper-division college courses in English.

### Required Courses

Students are required to complete 30 credit-hours in English. Six credit-hours may be taken at the 400-level. Students in the Master of Arts (Research) program write a thesis in lieu of 6 credit-hours of coursework.

ENGL.500 Methods of Literary Research, or ENG.A511 Literary Theory; and

ENGL.501 The Teaching of Writing, or its equivalent.

(Required of those who teach writing classes offered by the Department.)

### Additional Requirements

The final oral examination covers a set of texts from a list provided at the beginning of the program.

Both the non-research and research options of the M.A. degree program are also offered on the Madrid campus. Students who enroll in Madrid are required to spend one semester in residence on the Frost campus in St. Louis and to take two courses while they are there. Students who complete the SLUMadrid

program will also receive the M.A. degree from Universidad Autonoma de Madrid.

### Advancement to the Doctorate:

Admission to the doctorate is made by separate application, in the spring of the master's candidate's second year. Students seeking admission to the doctorate from the master's program must complete a written project testifying to their sustained ability to work independently. This requirement can be satisfied in one of two ways. If they wish, students in their second year may write a Master's Thesis; at the completion of this two-semester process, the candidate graduates with an M.A.(Research) degree. Alternately, students contemplating advancement to doctoral study can complete a Master's Essay in one semester. Written under the direction of a faculty member chosen by the student, the Master's Essay is shorter than a thesis but nevertheless testifies to the student's ability to independently frame and complete an article-length project (roughly 25-30 pages) of their own design. Students writing a Master's Essay must register for 3 hours of ENGL 598 (a Graduate Reading Course) in the semester in which they undertake this project.

## Doctor of Philosophy

### Prerequisites

An M.A. degree in English, or 30 credit-hours in course-work in English beyond the B.A.

### Required Courses

Students are required to take a minimum of 24 credit-hours in

English coursework beyond the M.A. Six credit-hours may be taken in English courses at the 400-level.

ENGL.500 OR ENGL.511 is required of all students who have not taken the equivalent in another program at another university as part of their prior training.

### Additional Requirements

Prior to the doctoral examination, the student must pass a two hour translation test in a modern foreign language relevant to the chosen area of concentration. Students seeking a specialization in Medieval or Renaissance English must also pass a two-hour translation test in Latin or classical Greek. Students will take six-hour written and two-hour oral examinations in their chosen areas of concentration. In consultation with a faculty advisor each student selects one of two available examination structures: a major period and two minor areas, or a major specialty and one minor area. For either structure, the examination will be based upon approved reading lists that include at least 90 primary works.

The topic of the dissertation must be formally submitted to and approved by the dissertation committee in a one-hour dissertation prospectus review.

### COURSE DESCRIPTIONS

#### Upper-Division Undergraduate Courses

#### *ENGL.400-404 Writing and Rhetoric*

ENGL.400 Business and Professional Writing

ENGL.401 Advanced Expository Writing

ENGL.402 Introduction to Writing Instruction: Secondary Education

ENGL.403 Rhetorical Theory/History of Rhetoric

ENGL.404 Special Topics in Rhetoric

#### *ENGL.405-409: Creative Writing*

ENGL.405 Advanced Creative Writing: Poetry

ENGL.406 Advanced Creative Writing: Fiction

ENGL.407 Advanced Creative Writing: Drama

ENGL.408 Advanced Creative Writing: Non-Fiction

ENGL.409 Advanced Creative Writing: Special Topics

#### *ENGL.410-412 Language Studies*

ENGL.411 Introduction to Linguistics

ENGL.412 Language Studies: Special Topics

#### *ENGL.413-419 Literary Theory, Cultural Studies, and Film Studies*

ENGL.413 Literary Theory

ENGL.414 Cultural Studies

ENGL.415 Ethnic and Race Studies

ENGL.416 Gender Studies

ENGL.417 American Film History

ENGL.418 Film Theory

ENGL.419 Literary Theory, Cultural Studies, and Film Studies: Special Topics

#### *ENGL.420-429 Medieval Literature*

ENGL.420 Introduction to Old English

ENGL.421 Beowulf

ENGL.422 Introduction to Old Norse

ENGL.423 Literature of the Vikings

ENGL.424 Chaucer: The Canterbury Tales

ENGL.425 Chaucer: Troilus and Criseyde and Shorter Works

ENGL.426 Medieval Drama

ENGL.427 Arthurian Literature: Medieval to Modern

ENGL.428 The Alliterative Tradition

ENGL.429 Medieval Literature: Special Topics

#### *ENGL.430-439 Sixteenth and Seventeenth Century Literature*

ENGL.430 The Age of Elizabeth

ENGL.431 Early Shakespeare

ENGL.432 Later Shakespeare

ENGL.433 Renaissance Drama

ENGL.434 Renaissance Poetry and Prose

ENGL.435 17th Century Literature

ENGL.436 Milton

ENGL.437 Renaissance Literature and Rhetoric

ENGL.438 Early Women Writers

ENGL.439 16th and 17th Century Literature: Special Topics

*ENGL.440-445 Restoration & Eighteenth Century Literature*

ENGL.440 Restoration Literature

ENGL.441 18th Century Literature

ENGL.442 Dryden, Pope, Swift

ENGL.443 The Age of Johnson

ENGL.444 Restoration and 18th Century Drama

ENGL.445 Restoration and 18th Century Literature: Special Topics

*ENGL.446-452 18th & 19th Century British Literature*

ENGL.446 The Gothic Novel

ENGL.447 Crime and Punishment

ENGL.448 Jane Austen and her Predecessors

ENGL.5449 18th and 19th Century Women Writers

ENGL.450 The Age of Romanticism

ENGL.451 Romantic Poetry

ENGL.452 18th and 19th Century Literature: Special Topics

ENGL.453-459 19th Century British Literature and Culture

ENGL.453 The Victorian Age

ENGL.454 Victorian Fiction

ENGL.455 Victorian Poetry

ENGL.456 The Victorian Essay/Prose

ENGL.457 Victorian Satire

ENGL.458 Major Victorian Authors/Movements

ENGL.459 19th Century Literature: Special Topics

*ENGL.460-469 20th & 21st Century British, Irish, and Postcolonial Literature*

ENGL.460 British Literature 1900-1945

ENGL.461 Female/Expatriate Modernism

ENGL.462 British Postmodernism

ENGL.463 Nationalism and the Irish Cultural Revival

ENGL.464 Mid-20th Century Irish Culture and Politics

ENGL.465 Contemporary Irish Literature, Culture, and Politics

ENGL.466 Early 20th Century Postcolonial Literature and Culture

ENGL.467 Contemporary Postcolonial Literature and Culture

ENGL.468 Major Postcolonial Writers

ENGL.469 20th/21st Century Literature: Special Topics

#### *ENGL.470-489 American Literature*

ENGL.470 American Literary Tradition to 1865

ENGL.471 American Literary Tradition 1865-present

ENGL.472 Contemporary American Literature

ENGL.473 Ethnic American Literature

ENGL.474: 19th Century American Literature

ENGL.475 19th Century American Poetry

ENGL.476 20th Century American Literature

ENGL.477 20th Century American Poetry

ENGL.478 Recent American Poetry

ENGL.479 American Drama

ENGL.480 American Short Story

ENGL.481 Major American Authors

ENGL.482 Pre-1900 African American Literature

ENGL.483 Post-1900 African American Literature

ENGL.484 Native American Literature

ENGL.485 Latino American Literature

ENGL.486 Literature and Culture of the Americas

ENGL.487 The Adolescent in American Literature

ENGL.489 American Literary and Cultural Studies: Special Topics

ENGL.490-493 Special Studies

ENGL.490 Interdisciplinary Studies

ENGL.491 Comparative Literature: Special Topics

ENGL.492 World Literature: Special Topics

ENGL.493 Special Topics in Literature

#### Graduate Courses

#### *Research Methodology and Pedagogy*

ENGL.500 Methods of Literary Research (3)

Introduction to resources and methods of research central to the scholarly study of literature. (Offered every year.)

ENGL.501 Teaching Writing (3)

Introduction to traditional and contemporary theories of rhetoric and composition, with special attention to their application in classroom practice. (Offered every year.)

ENGL.502 Teaching Literature (3)

Introduction to the theories and practices of presenting literature in the college classroom. (Offered occasionally.)

**ENGL.504 Problems in Rhetoric (3)**

Focused examination of a specific historical, theoretical, or practical issues in rhetoric and composition. (Offered occasionally.)

**Theory and Criticism****ENGL.510 History of Literary Criticism from Aristotle to the Present (3)**

Historical introduction to the significant epochs in the development of literary criticism from ancient to modern times. (Offered occasionally.)

**ENGL.511 Literary Theory (3)**

Introduction to the conceptions of the literary text that have influenced the reception and criticism of literature, with special attention to the development of theory through the twentieth century. (Offered every year.)

**ENGL.512-518**

These courses serve to introduce students to literary theory through an examination of theoretical approaches to writings drawn from particular periods or epochs. (Offered occasionally.)

**ENGL.512 Theoretical Perspectives in Medieval Literature (3)****ENGL.513 Theoretical Perspectives in Renaissance Literature (3)****ENGL.514 Theoretical Perspectives in Restoration and 18th-Century British Literature (3)****ENGL.515 Theoretical Perspectives in 19th-Century British Literature (3)****ENGL.516 Theoretical Perspectives in 20th-Century British Literature (3)****ENGL.517 Theoretical Perspectives in American Literature (3)****ENGL.518 Theoretical Perspectives in Contemporary Literature (3)****ENGL.519 History of the English Language(3)****Studies in Language and Literature****ENGL.520 Introduction to Old English (3)**

Introduction to the Anglo-Saxon language, its grammar and vocabulary, with particular application to a selection of the most prominent works of Old English literature. (Offered every other Fall semester.)

**ENGL.521 Beowulf (3)**

Prerequisite: ENGL.520 or equivalent. Translation and interpretation of the first English epic, with attention paid to the cultural context of the poem, its formal elements, and its place in the heroic tradition of Old English literature. (Offered occasionally.)

**ENGL.522 Introduction to Old Norse (3)**

Introduction to the Old Norse language, its grammar and vocabulary. Select readings in Old Norse mythology and Viking sagas. (Offered every other Fall semester.)

**ENGL 523 Literature of the Vikings (3)**

Explores the myths, legends and sagas of the Viking era, including heroic poems. Examines their impact on European culture (offered regularly.)

**ENGL.527 Arthurian Literature (3)**

The development of the Arthurian legend from medieval times to the present day, taking in material from Celtic, French, English, and American cultural traditions, but centered on Sir Thomas Malory's *Morte Darthur*. (Offered every other year.)

**ENGL 534 Old English Literature (3)**

Overview of the surviving Old English corpus, including elegiac, gnomic, Biblical and hagiographic poetry, as well as the development of Old English prose (offered every other year).

**ENGL 535 History of the English language (3)**

Survey of the main features of Old, Middle and Modern English (offered regularly).

**ENGL.571 American Fiction, 1900-1950 (3)**

The transformation of American fiction that occurred during the first half of the 20th century, with emphasis more or less equally upon thematic and aesthetic considerations. The writings of approximately eight authors, including Faulkner, Hemingway, and Dos Passos. (Offered occasionally.)

**ENGL.580 Studies in Contemporary Culture (3)**

Media such as film, photography, television, and periodical journalism which supply an indispensable context for study of modern literature. Designed around various themes, styles, and movements. (Offered occasionally.)

**ENGL.593 Special Topics (1-3)****ENGL.595 Special Study for Examinations (0)****ENGL.598 Graduate Reading Course (1-3)**

Permission of Instructor and Director of Graduate Studies required.

**ENGL.599 Thesis Research (0-6)****ENGL.5CR.90 Master's Degree Study (0)****Advanced Graduate Seminars****ENGL.604 Rhetorical Theory and Discourse Pedagogy (3)**

Major rhetorical theories underlying discourse pedagogy, with special attention to the ways in which specific theoretical positions inform curricular practices. (Offered occasionally.)

**ENGL.610 Studies in Literary Theory (3)**

Selected issues, developments, or schools in literary theory. (Offered occasionally.)

**ENGL.615 Genre Studies (3)**

Selected writings and issues integral or peculiar to the definition of particular genres or subgenres. (Offered occasionally.)

**ENGL.617 Literary Themes (3)**

Selected writers, writings, and issues associated by common themes. (Offered occasionally.)

**ENGL.619 Interdisciplinary Studies (3)**

Selected figures, works, and issues studied from the perspective afforded by specific disciplines or media. (Offered occasionally.)

**ENGL.625 Chaucer: The Canterbury Tales (3)**

Prerequisite: ENGL.423 or equivalent, or permission of Instructor. Chaucer's writings with special attention to *The Canterbury Tales*. (Offered occasionally.)

**ENGL.626 Studies in Chaucer (3)**

Prerequisite: ENGL.625 or ENGL.423 or equivalent, or permission of Instructor. Selected issues in and portions of Chaucer's writings with special attention to *Troilus and Criseyde* and other major works by Chaucer apart from *The Canterbury Tales*. (Offered occasionally.)

**ENGL.627 Middle English Literature (3)**

Selected issues or representative figures in Middle English literature. (Offered occasionally.)

**ENGL.630 Sixteenth-Century Non-Dramatic Literature (3)**

Non-dramatic figures or currents in the literature of Tudor England. (Offered occasionally.)

**ENGL.631 Renaissance Drama (3)**

Renaissance dramatists other than Shakespeare. (Offered occasionally.)

**ENGL.632 Shakespeare (3)**

Selected groupings of Shakespeare's works. (Offered occasionally.)

**ENGL.635 Seventeenth-Century Literature (3)**

Figures or developments in English literature of the seventeenth century. (Offered occasionally.)

**ENGL.636 Seventeenth-Century Poetry (3)**

Groups or movements in English poetry of the seventeenth century. (Offered occasionally.)

**ENGL.639 Special Topics in Renaissance Literature (3)**

Particular issues and developments in the literature and culture of the English Renaissance. (Offered occasionally.)

**ENGL.640 Restoration Literature (3)**

Representative figures, issues, and developments in English writing of the late seventeenth century. (Offered occasionally.)

**ENGL.641 Restoration and Eighteenth-Century Poetry (3)**

Significant figures and developments in English poetry of the Restoration and the eighteenth-century English literature. (Offered occasionally.)

**ENGL.642 Restoration and Eighteenth-Century Prose Fiction (3)**

The novel and prose fiction writing in Restoration and eighteenth-century English literature. (Offered occasionally.)

**ENGL.643 Restoration and Eighteenth-Century Drama (3)**

Selected playwrights, plays, and issues in the English theater of the Restoration and the eighteenth century. (Offered occasionally.)

**ENGL.649 Special Topics in Restoration and Eighteenth-Century Literature (3)**

Particular issues and developments in Restoration and eighteenth-century English literature. (Offered occasionally.)

**ENGL.650 Romanticism (3)**

Selected writers and works of the Romantic period in British literature. (Offered occasionally.)

**ENGL.651 Nineteenth-Century Prose Non-Fiction (3)**

Selected writers and works of prose non-fiction in nineteenth-century England. (Offered occasionally.)

**ENGL.652 Victorian Poetry (3)**

Selected figures, works, and issues in nineteenth-century British poetry. (Offered occasionally.)

**ENGL.653 Nineteenth-Century Novel (3)**

Selected writers, works, and issues in nineteenth-century British fiction. (Offered occasionally.)

**ENGL.659 Special Topics in Nineteenth-Century English Literature (3)**

Studies in particular issues and developments in British literature of the nineteenth century. (Offered occasionally.)

**ENGL.660 Studies in Modernism (3)**

Selected figures, movements, and developments representative of modernisms in English in the first half of the twentieth century. (Offered occasionally.)

**ENGL.661 Twentieth-Century Fiction (3)**

Selected writers and works of fiction of the twentieth century. (Offered occasionally.)

**ENGL.662 Twentieth-Century Poetry (3)**

Selected figures, movements, and developments in poetry of the twentieth century. (Offered occasionally.)

**ENGL.663 Twentieth-Century Drama (3)**

Selected figures, epochs, and developments in literatures in drama of the twentieth century. (Offered occasionally.)

**ENGL.669 Special Topics in Literature of the Twentieth Century (3)**

Particular issues and developments in literatures in English of the twentieth century. (Offered occasionally.)

**ENGL.670 Early American Literature (3)**

Significant figures, writers, works, and epochs central to the development of American literature in the nineteenth century. (Offered occasionally.)

**ENGL.671 Nineteenth-Century American Literature (3)**

Representative writers, works, and epochs central to the development of American literature in the nineteenth and early twentieth centuries. (Offered occasionally.)

**ENGL.672 Nineteenth-Century American Poetry (3)**

Central figures, works, and issues in American poetry in the nineteenth and early twentieth centuries. (Offered occasionally.)

**ENGL.673 Nineteenth-Century American Modernism (3)**

Writers, works, and issues in American fiction writing, with special attention to developments in the nineteenth and early twentieth centuries. (Offered occasionally.)

**ENGL.674 Studies in American Modernism (3)**

Significant figures, groupings, and developments that shaped American modernist writing. (Offered occasionally.)

**ENGL.676 Twentieth-Century American Fiction (3)**

Writers and works of prose fiction of the twentieth century. (Offered occasionally.)

**ENGL.677 Twentieth-Century American Poetry (3)**

Writers and developments in American poetry of the twentieth century. (Offered occasionally.)

**ENGL.678 Twentieth-Century American Drama (3)**

Playwrights, plays, and issues in the theater of the twentieth century. (Offered occasionally.)

**ENGL.679 Special Topics in Twentieth-Century American Literature (3)**

Particular issues and developments in American literature of the twentieth century. (Offered occasionally.)

**ENGL.685 Studies in Comparative Literature (3)**

Writers, works, genres, and issues from a comparative focus that situates literature of the English language in the context of developments in world literature. (Offered occasionally.)

**ENGL.693 Special Topics (1-3)****ENGL.695 Special Study for Examinations (0)****ENGL.698 Graduate Reading Course (1-3)**

Permission of Instructor and the Director of Graduate Studies required.

**ENGL.699 Dissertation Research (0-6)****ENGL.6CR.99 Doctor of Philosophy Degree Study (0)**

## HISTORY

**Philip R. Gavitt, Ph.D.,**

*Department Chairperson*

**T. Michael Ruddy, Ph.D.,**

*Director of the Graduate Program*

The Department offers the Ph.D. in Medieval, Early Modern, and U.S. History. Master's students may specialize in one of these three fields or in Late Antiquity/Byzantine or Modern European History. Doctoral students must choose a primary and secondary specialty. The secondary area may be in any of the areas cited for Master's degree study or a specialized area constructed in consultation with the departmental advisor and

the approval of the graduate committee. The Department participates in the activities of the Center for Medieval and Renaissance Studies and is ranked in the nation's top 100 doctoral programs by U.S. News and World Report.

## Master of Arts Master of Arts (Research)

**Prerequisite**

An undergraduate area of concentration in history or the equivalent.

**Required Courses**

Thirty hours of coursework (twenty-seven hours for those enrolled in the combined MA/Ph.D. program), including HIST.500; a historical studies course and a seminar in the chosen specialty. A maximum of six (6) credit-hours may be taken in academic fields other than history. For those pursuing an MA research degree, six (6) hours of thesis research replaces six (6) hours of coursework.

**Additional Requirements**

Competency in one foreign language to be verified by written examination. A two hour written comprehensive exam and one hour oral for the MA; a one-hour oral thesis presentation for MA research. (For students continuing on to the Ph.D., an oral presentation of a seminar research paper will replace the thesis requirement.)

*A formal minor is not permitted.*

## Doctor of Philosophy Combined MA/Doctor of Philosophy

**Prerequisites**

A Master's degree in the field or the equivalent.

**Required Courses**

For students entering with an MA from another institution, twenty-seven hours of coursework; for those pursuing the combined MA/Ph.D., thirty-six hours total (twenty-seven from the MA plus nine (9) additional hours). Course work must include HIST.500 and historical studies courses and seminars in both the primary and secondary specialties. A maximum of six (6) credit hours may be taken in fields other than history.

**Additional Requirements**

Competency in two foreign languages. If primary specialty is Medieval or Early Modern history, one of the two languages must be Latin. In U.S. history, approved courses in research methods can replace the second language. In-residence, fulltime study for at least one year. Two four-hour written exams and a two-hour oral exam at the end of coursework. Six (6) hours of prospectus courses leading to the preparation of a prospectus, including a historical essay, before undertaking dissertation research.

## COURSE DESCRIPTIONS

### Graduate Courses

#### **HIST.500 Theory and Practice of History: An Introduction (3)**

Examination of some of the most influential theories of today's intellectual marketplace which affect the study of history. Extending from historical materialism through structuralism, semiotics, post structuralism, postmodernism, and critical theory, to gender and narrative history. Study of selected cases of scholarship on American history as tools of interpretation and as forms of writing about the past. (Offered annually.)

#### **HIST.520 Studies in Late Ancient and Byzantine History (3)**

A general examination of the historiography and literature in late ancient and Byzantine history. (Offered annually.)

#### **HIST.521 Advanced Studies in Late Ancient and Byzantine History (3)**

An examination of the historiography and literature in specialized topics I late ancient and Byzantine history. (Offered annually.)

#### **HIST.525 Perspectives in Late Ancient and Byzantine History (3)**

Lectures and readings on historical events and wider trends in late ancient or Byzantine history. (Offered every semester.)

#### **HIST.530 Studies in Medieval History (3)**

An examination of the most important topics in medieval history including historiographic background, literature, and current trends. This course will acquaint the student with the work and thought of the leading scholars in medieval studies as well as differing perspectives. (Offered annually.)

#### **HIST.531 Advanced Studies in Medieval History (3)**

An examination of the historiography, literature, and current trends in specialized topics in Medieval history. (Offered annually.)

#### **HIST.535 Perspectives in Medieval History (3)**

Lectures and readings on historical events and forces affecting specific periods in Medieval history. (Offered every semester.)

#### **HIST.540 Studies in Early Modern European History (3)**

Study and discussion of secondary literature in Renaissance and Reformation (early Modern European) history. (Offered annually.)

#### **HIST.541 Advanced Studies in Early Modern European History (3)**

Examination of the historiography, literature, and current trends in specialized topics in Renaissance/Reformation History. (Offered annually.)

#### **HIST.545 Perspectives in Early Modern European History (3)**

Lectures and readings on events and forces affecting specific periods in Renaissance/Reformation history. (Offered every semester.)

#### **HIST.550 Studies in Modern European History (3)**

An introduction to Modern European history from 1600 to the present. Course offers students the opportunity to become acquainted with historiography, methods, and current debate in the specialty. (Offered every other year.)

#### **HIST.551 Advanced Studies in Modern European History (3)**

Examination of the historiography, literature, and current trends in specialized topics in Modern European history. (Offered every other year.)

#### **HIST.555 Perspectives in Modern European History (3)**

Lectures and readings on events and forces affecting specific periods in Modern European history. (Offered every semester.)

#### **HIST.560 Studies in American History (3)**

An introduction to methodology and recent literature in the study of United States history. Topics will range from colonial through contemporary American history. (Offered annually.)

#### **HIST.561 Advanced Studies in American History (3)**

Examination of the historiography, literature, and current trends in specialized topics in United States history. (Offered annually.)

#### **HIST.565 Perspectives in American History (3)**

Lectures and readings on events and forces affecting specific periods in United States history. (Offered every semester.)

#### **HIST.590 History Teaching Practicum (0)**

Required of all graduate teaching assistants, this course covers teaching methods, lecturing, and other topics necessary to prepare an effective teacher. (Offered every Fall semester.)

#### **HIST.593 Special Topics in History (1-3)**

#### **HIST.595 Special Study for Examinations (0)**

#### **HIST.597 Research Topics (1-3)**

#### **HIST.598 Graduate Reading Course (1-3)**

#### **HIST.599 Thesis Research (0-6)**

#### **HIST.5CR.90 Master's Degree Study (0)**

#### **HIST.680 Seminar in Late Ancient and Byzantine History (3)**

Advanced research on a specific topic in late ancient or Byzantine history. Introduction to source collections, library resources, and other research tools. (Offered annually.)

#### **HIST.681 Seminar in Medieval History (3)**

Advanced research in a specific topic in Medieval history. Introductions to essential source collections, library resources, source criticism, archival methods, paleography. (Offered annually.)

#### **HIST.682 Seminar in Early Modern European History (3)**

Introduction to research in Renaissance and Reformation Europe. Students become acquainted with research tools in Renaissance and Reformation history, to learn paleographic and codicological skills. (Offered annually.)

#### **HIST.683 Seminar in Modern European History (3)**

An opportunity to undertake advanced research, through primary and archival sources and secondary literature, in a specific area of Modern European history (1600 to the present). (Offered every other year.)

#### **HIST.684 Seminar in American History (3)**

An introduction to advanced research in American history. Readings in secondary literature. Students will undertake research, using also primary and archival sources. Thematic and chronological topics. (Offered annually.)

#### **HIST.693 Special Topics in History (1-3)**

#### **HIST.695 Special Study for Examinations (0)**

#### **HIST.697 Research Topics (1-3)**

#### **HIST.698 Graduate Reading Course (1-3)**

#### **HIST.699 Dissertation Research (0-6)**

#### **HIST.6CR.99 Doctoral Degree Study (0)**

# INTEGRATED AND APPLIED SCIENCES

**Paul Jelliss, Ph.D.,**  
*Graduate Program Director*

## Doctor of Philosophy

The Ph.D. program in Integrated and Applied Sciences utilizes interdisciplinary approaches and collaboration within the fields of Chemistry, Physics, Biology, Biomedical Sciences, and Environmental Sciences to prepare graduates to confidently assume multi-faceted roles in the changing scientific community.

The distribution of courses in the various IAS areas is determined by the student's dissertation committee with a minimum total of 48 credit hours between all three areas. A total of 60 credit hours are required with the remaining 12 credit hours coming from dissertation credits. An appropriate coursework track is developed by the student and their mentor with subsequent approval by the IAS Administrative Committee.

### Prerequisites

A Master's or Bachelor's degree in an area appropriate for the proposed interdisciplinary study.

### Required Courses

Students choose a core department, completing 25-29 credit hours of lecture or laboratory-based 500 and 600 level courses. Students are also required to complete the following courses for at least four and up to six semesters:

#### IAS.601 Interdisciplinary Seminar; and

#### IAS.603 (Current Topics in) Interdisciplinary Research

### Additional Requirements

Students must complete 19-26 credit hours in courses selected from outside the core department. These may be taken from: Chemistry, Earth & Atmospheric Science, Engineering, Physics, Mathematics & Computer Science, Biology, Biomedical Sciences, Public Health, and Research Methodology. 12 credit hours of Dissertation Research are required.

## COURSE DESCRIPTIONS

### Graduate Courses

#### IAS.517 Introduction to GIS (3)

This class introduces concepts, science and theory of GIS with hands-on experiences. After successful completion of the course, students will be able to demonstrate fundamental techniques of geospatial analysis and mapping. Students may only apply credits towards their graduation requirements from one of the following courses: IAS-517, BIOL-517, or SOC-565. (Offered every Fall semester.)

#### IAS.518 Intermediate GIS (3)

This course covers intermediate and advanced topics in GIS including remote sensing for GIS, geospatial statistics and GIS in biogeography. Each module is taught by a separate professor specialized in that particular area for 5 weeks during a semester. Students may only apply credits towards their graduation requirements from one of the following courses: IAS-518, BIOL-518, or SOC-566. (Offered every Spring semester.)

#### IAS.519 Geospatial Methods in Environmental Studies (3)

For students and professionals in Environmental Sciences, this course explores an integrated GIS and remote sensing approach to solve real-world environmental problems. Through hands-on projects, the course will also prepare students for today's growing business needs in innovative server based GIS solutions, relational databases and web mapping in an enterprise environment. (Offered every Spring semester.)

#### IAS.551 Remote Sensing of the Environment and Resources (3)

Fundamental knowledge on the physics of remote sensing, photogrammetry, multispectral, hyperspectral, thermal imaging and RADAR and LIDAR principles are reviewed in lectures while lab assignments cover image processing, environmental modeling & analysis. Course objective is to demonstrate present applications of RS in environmental sciences with software training in ENVI+IDL, SARscape. (Offered every Fall semester.)

#### IAS.552 Digital Image Processing (2)

This course familiarizes students with state of the art digital image processing techniques and practice remote sensing applications in various fields. Course objective is to demonstrate present applications of remote sensing with software training in ENVI+IDL, SARscape, and provide students with the skills and knowledge to apply remote sensing to their own research problems. (Offered every Fall semester.)

#### IAS.555 Microwave Remote Sensing: SAR principles, data processing and Applications (3)

This course covers principles of synthetic aperture radar (SAR), SAR satellites and data sources, SAR image processing, interpretation and applications. Popular data processing techniques including SAR intensity processing, InSAR and DInSAR techniques, polarimetric classification, Persistent Scatterer Interferometry, and pros and cons of Radar w/ LiDAR are discussed through step-by-step lab work. (Offered every Fall semester.)

#### IAS.556 InSAR - Synthetic Aperture Radar Interferometry (3)

This course focuses on providing application oriented forum on InSAR for geoscientists. Principles of InSAR, DInSAR, timeSAR are introduced through hands-on lab work on measuring earthquake deformation, volcanic unrest, land subsidence due to extraction of groundwater, oil, gas, and coal mining using both commercial and open-source software tools. (This course is taught for 5 days, Monday through Friday (8:00 AM - 5:00 PM) in the 1st session of Summer term started in May, and may be offered in evenings in normal semesters.)

#### IAS.601 Interdisciplinary Seminar (1)

Students will attend a mix of departmental seminars and seminars by specially invited IAS speakers, where research of an interdisciplinary nature will be presented. Registration required of those students who have achieved Ph.D. candidacy. (Offered every Fall and Spring semester.)

#### IAS.603 (Current Topics in) Interdisciplinary Research (2)

Each semester students will investigate, present, and discuss the current scientific literature pertaining to interdisciplinary research in science and/or engineering topics. Registration required of those students who have achieved Ph.D. candidacy. (Offered every Fall and Spring semester.)

#### IAS.695 Special Study for Examinations (0)

#### IAS.697 Research Topics (1-3)

#### IAS.698 Graduate Reading Course (1-3)

#### IAS.699 Dissertation Research (0-12)

#### IAS.6CR.99 Doctor of Philosophy Study (0)



# MATHEMATICS

**James Hebda, Ph.D.,**

*Department Chairperson*

**Julianne G. Rainbolt, Ph.D.,**

*Graduate Director*

The Department of Mathematics and Computer Science offers programs of instruction and research leading to the Master of Arts and Doctor of Philosophy degrees in Mathematics. The M.A. is intended to prepare students for further study toward the Ph.D. degree or for a career in teaching or industry. The Ph.D. degree program prepares students for research and/or teaching careers in colleges, universities, or industry. The faculties are internationally recognized in many areas of research including topology, differential geometry, algebra and analysis.

## Master of Arts

### Master of Arts (Research)

#### Prerequisite

An undergraduate area of concentration in Mathematics.

#### Required Courses

Two of the following three sequences must be completed with a grade of "B" or higher in each course:

MATH.511 Algebra I, MATH.512 Algebra II;

MATH.521 Analysis I, and one of MATH.522 Complex Analysis, MATH 523 Functional Analysis, and MATH 524 Harmonic Analysis; and

MATH.531 Topology I, MATH.532 Topology II.

*No formal minor is permitted.*

## Doctor of Philosophy

#### Prerequisite

A Master's degree in Mathematics, or Bachelor's degree in Mathematics and a strong background, particularly in analysis and algebra.

#### Required Courses

Four year long sequences:

MATH.511 Algebra I, and MATH.512 Algebra II;

MATH.521 Analysis I and one of MATH.522 Complex Analysis, MATH 523 Functional Analysis, and MATH 524 Harmonic Analysis;

MATH.531 Topology I and MATH.532 Topology II;

MATH.641 Differential Geometry I, and

MATH.642 Differential Geometry II.

#### Additional Requirements

Demonstration of proficiency in one of the following languages: French, German, or Russian. Proficiency is to be

demonstrated by passing a journal/translation examination administered by the department.

*No formal minor is permitted.*

COURSE DESCRIPTIONS

Upper-Division Courses

**MATH.401 Elementary Theory of Probability (3)**

**MATH.402 Introductory Mathematical Statistics. (3)**

**MATH.403 Probability and Statistics for Engineers, (3)**

**MATH.405 History of Mathematics (3)**

**MATH.411 Introduction to Abstract Algebra (3)**

**MATH.412 Linear Algebra (3)**

**MATH.415 Number Theory (3)**

**MATH.421 Introduction to Analysis (3)**

**MATH.422 Metric Space (3)**

**MATH.423 Multivariable Analysis (3)**

**MATH.441 Foundations of Geometry (3)**

**MATH.447 Non-Euclidean Geometry (3)**

**MATH.448 Differential Geometry (3)**

**MATH.451 Introduction to Complex Variables (3)**

**MATH.452 Complex Variables II (3)**

**MATH.453 Geometric Topology (3)**

**MATH.455 Nonlinear Dynamics and Chaos (3)**

**MATH.457 Partial Differential Equations (3)**

**MATH.463 Graph Theory (3)**

**MATH.465 Cryptography (3)**

#### Graduate Courses

**MATH.501 Linear Algebra (3)**

Prerequisite: advanced undergraduate course in modern algebra. Advanced linear algebra including linear transformations and duality, elementary canonical forms, rational and Jordan forms, inner product spaces, unitary operators, normal operators, and spectral theory. (Offered every other year.)

**MATH.502 Metric Spaces (3)**

Prerequisite: an advanced undergraduate course in analysis. Set theory, real line, separation properties, compactness, metric spaces, metrization. (Offered every other year.)

**MATH.503 Number Theory (3)**

Introduction to algebraic number theory. Topics will include primes, Chinese remainder theorem, Diophantine equations, algebraic numbers and quadratic residues. Additional topics will vary from year to year. (Offered every other year.)

**MATH.504 Multivariable Analysis(3)**

Prerequisite: MATH.421. Sequences and Series of functions, Differentiability, Integrability, Inverse and Implicit function theorems, Fundamental Theorems of Multivariable Calculus (Green's Theorem, Stokes Theorem, Divergence Theorem). (Offered every other year.)

**MATH.511 Algebra (3)**

Prerequisite: MATH.412. Simple properties of groups, groups of transformations, subgroups, homomorphisms and isomorphisms, theorems of Schreier and Jordan-Hölder, rings, integral domains, fields, polynomials, direct sums and modules. (Offered every Fall semester.)

**MATH.512 Algebra II (3)**

Prerequisite: MATH.511. Rings, fields, bases and degrees of extension fields, transcendental elements, normal fields and their structures. Galois theory, finite fields; solutions of equations by radicals, general equations of degree  $n$ . (Offered every Spring semester.)

**MATH.521 Real Analysis I (3)**

Prerequisite: MATH.422. The topology of the reals, Lebesgue and Borel measurable functions, properties of the Lebesgue integral, differential of the integral. (Offered every Fall semester.)

**MATH.522 Complex Analysis (3)**

Prerequisite: MATH.521 and MATH.531. Holomorphic and Harmonic functions and power series expansions. Complex integration. Cauchy's theorem and applications. Laurent series, singularities, Runge's theorem, and

the calculus of residues. Additional topics may include Analytic continuation, Riemann surfaces, and conformal mapping. (Offered occasionally.)

**MATH.523 Functional Analysis (3)**

Prerequisite: MATH.521 and MATH.531. Banach and Hilbert spaces. Linear functionals and linear operators. Dual spaces, weak and weak\* topologies. Hahn-Banach, Closed Graph and Open Mapping Theorems. Topological Vector spaces. (Offered occasionally.)

**MATH.524 Harmonic Analysis (3)**

Prerequisite: MATH.521. Fourier Series on the circle, Convergence of Fourier series, Conjugate and maximal functions, Interpolation of Linear Operators, Lacunary Sequences, Fourier Transform on the line, Fourier transform on locally compact Abelian groups. (Offered occasionally.)

**MATH.531 Topology I (3)**

Prerequisite: MATH.422 or MATH.502. Topological spaces, convergence, nets, product spaces, metrization, compact spaces, uniform spaces and function spaces. (Offered every Fall semester.)

**MATH.532 Topology II (3)**

Prerequisite: MATH.531. Compact surfaces, fundamental groups, free groups and free products, Seifert-van Kampen theorem, covering spaces. (Offered every Spring semester.)

**MATH.593 Special Topics in Mathematics (1-3)**

**MATH.595 Special Study for Examinations (0)**

**MATH.598 Graduate Reading Course (1-3)**

Prior permission of instructor and chairperson required.

**MATH.599 Thesis Research (0-6)**

**MATH.5CR.90 Master's Degree Study (0)**

**MATH.611 Algebra III (3)**

Prerequisite: MATH.512. Categories and functors, properties of hom and tensor, projective and injective modules, chain conditions, decomposition and cancellation of modules, theorems of Maschke, Wedderburn, and Artin-Wedderburn, tensor algebras. (Offered every other year.)

**MATH.618 Topics in Algebra (3)**

Prerequisite: MATH.512. Various topics are discussed to bring graduate students to the forefront of a research area in algebra. Times of offering in accordance with research interests of faculty. (Offered occasionally.)

**MATH.621 Lie Groups and Lie Algebras (3)**

Prerequisite: MATH.511, MATH.522, and MATH.531. Lie groups and Lie algebras, matrix groups, the Lie algebra of a Lie group, homogeneous spaces, solvable and nilpotent groups, semi-simple Lie groups. (Offered every other year.)

**MATH.622 Representation Theory of Lie Groups (3)**

Prerequisite: MATH.621. Representation theory of Lie groups, irreducibility and complete reducibility, Cartan subalgebra and root space decomposition, root system and classification, coadjoint orbits, harmonic analysis on homogeneous spaces. (Offered every other year.)

**MATH.628 Topics in Analysis (3)**

Prerequisite: MATH.522. Various topics are offered to bring graduate students to the forefront of a research area in analysis. Times of offering in accordance with research interests of faculty. (Offered occasionally.)

**MATH.631 Algebraic Topology (3)**

Prerequisite: MATH.532. Homotopy theory, homology theory, exact sequences, Mayer-Vietoris sequences, degrees of maps, cohomology, Künneth formula, cup and cap products, applications to manifolds including Poincaré-Lefschetz duality. (Offered every other year.)

**MATH.632 Topology of Manifolds (3)**

Prerequisite: MATH.631. Examples of manifolds, the tangent bundle, maps between manifolds, embeddings, critical values, transversality, isotopies, vector bundles and tubular neighborhoods, cobordism, intersection numbers

and Euler characteristics. May be taught in either the piecewise-linear or differentiable categories. (Offered every other year.)

**MATH.638 Topics in Topology (3)**

Prerequisite: MATH.532. Various topics are offered to bring graduate students to the forefront of a research area in topology. Times of offering in accordance with research interests of faculty. (Offered occasionally.)

**MATH.641 Differential Geometry I (3)**

Prerequisite: MATH.532. The theory of differentiable manifolds, topological manifolds, differential calculus of several variables, smooth manifolds and submanifolds, vector fields and ordinary differential equations, tensor fields, integration and De Rham cohomology. (Offered every Fall semester.)

**MATH.642 Differential Geometry II (3)**

Prerequisite: MATH.641. Continuation of MATH.641. (Offered every Spring semester.)

**MATH.648 Topics in Geometry (3)**

Prerequisite: MATH.532. Various topics are offered to bring graduate students to the forefront of a research area in geometry. Times of offering in accordance with research interests of faculty. (Offered occasionally.)

**MATH.695 Special Study for Examinations (0)**

**MATH.698 Graduate Reading Course (1-3)**

Prior permission of instructor and chairperson required.

**MATH.699 Dissertation Research (0-6)**

**MATH.6CR.99 Doctor of Philosophy Degree Stud (0)**

## MODERN AND CLASSICAL LANGUAGES

**Anthony C. Daly, S.J., Ph.D.,**  
*Department Chairperson*

### Master of Arts in French

**Pascale Perraudin, Ph.D.,**  
*Graduate Program Director*

The Master of Arts degree program in French offers a diverse curriculum in French language, cultures, and literatures, including Francophone studies, film, and gender studies. The Master of Arts is designed to suit the needs of those planning or already engaged in professional careers such as teaching or international affairs. At the same time, the program provides excellent preparation for studies in French beyond the master's degree.

Qualified students may add a minor in Spanish to their M.A. degree program in French. This combination can be an attractive option for those preparing to teach or work in an environment where competency in two Romance languages would be an asset.

**Prerequisite**

An undergraduate major in French or the equivalent.

**Required Courses**

FREN.510 Critical Writing, Oral Expression, and Research; Nine semester-hours of coursework prior to 1900 and nine semester-hours of coursework after 1900.

### Additional Requirements

A final written project to be approved by the graduate examination committee or a written comprehensive examination.

*A formal minor may be permitted.*

## COURSE DESCRIPTIONS

### Upper-Division Courses

With the permission of the course instructor and the Graduate Program Director, undergraduate students may petition to enroll in literature and culture courses under the graduate (500-level) number.

### Graduate Courses

#### FREN.500 Teaching College French (0)

Practice-centered teaching training for college-level French courses. Discussion and application of course development, of current approaches to teaching, and of evaluation techniques. Systematic incorporation of technology in the learning process. (Offered every semester.)

#### FREN.507 Studies in Francophone Culture (3)

An analysis of the culture, history and cultural content of selected literary texts of a French-speaking country (such as Canada) or a group of French speaking countries (such as Francophone West Africa). The “politics” of writing and identity are discussed. (Offered occasionally.)

#### FREN.510 Critical Writing, Oral Expression, and Research (3)

Taking as a point of departure a specific theme in French literature or culture, this course aims at expanding expository and critical expression in French. Students will strengthen their ability to analyze texts and will develop strategies for carrying out research in French and Francophone studies. (Offered every Fall semester.)

#### FREN.533 French “Moralists” (3)

This course attempts to define the “moralist” and analyze the work of representative writers from the Renaissance through the 17th century in light of this definition. An introductory overview of thought and attitudes marking the Middle Ages is followed by the study of texts by Montaigne, Pascal, La Rochefoucauld, La Bruyère and Madame de Lafayette. (Offered occasionally.)

#### FREN.534 The Age of Enlightenment (3)

A study of the 18th-century French “philosophes” and their notion of society and the ideal citizen, followed by a look at the 18<sup>th</sup> century as the “Age of Enchantment,” through examining the novel of sensibility and the notion of the fantastic. (Offered occasionally.)

#### FREN.535 Studies in 19th-Century French Novel (3)

This course examines the emergence of the novel as a genre in France. Both literary technique as well as the socio-cultural factors present at the time of the work’s creation will be considered. To be studied are selected works by Chateaubriand, Hugo, Balzac, Sand, Stendhal, Flaubert, Zola. (Offered occasionally.)

#### FREN.537 Literature of the Fantastic (3)

This course examines a literary genre known as the *conte fantastique* (fantastic short story) that emerged in 19th-century France and whose legacy is still seen in today’s literature, cinema, and art. Fantastic tales by well-known authors such as Balzac, Gautier, Maupassant, Mérimée and the German writer Hoffmann are analyzed from a theoretic perspective and for the underlying questions of identity, universal values and the unconscious that they contain. (Offered occasionally.)

#### FREN.539 Studies in 20th-Century French Prose (3)

An examination of the new directions taken by French fiction in light of the development of the notions of modernism and post-modernism. Representative texts ranging from the narrative innovations of Proust through

the Existential writing of Camus and Sartre, to the rise of the “Nouveau roman” of Duras and Robbe-Grillet, to recent contributions by Perec and Toussaint. (Offered occasionally.)

#### FREN.541 Early Modern French Poetry (3)

Eustache Deschamps described poetry as “natural music.” This course will explore the ways in which the “music” of poetry intensifies its meaning. We will trace the evolution of French poetry from its medieval origins through the seventeenth century. We will explore poetic techniques, devices, and forms. (Offered occasionally.)

#### FREN.542 Studies in 19th-Century French Poetry (3)

A study of poetic expression in France during the “Romantic” period and its aftermath. Representative works are examined from the point of view of theme and poetic technique, but also from the perspective of the greater artistic and historical context of the time. Examples from Lamartine, Hugo, Vigny, Musset, Gautier, Baudelaire. (Offered occasionally.)

#### FREN.551 Early Modern French Theater (3)

Following an introductory overview of Medieval and Renaissance theater, this course focuses on the 17th century and its three “greats” of French drama: Corneille, Racine, Molière. Play analysis and discussion will take into consideration literary trends of the period (préciosité, realism and classicism), as well as modern literary criticism. (Offered occasionally.)

#### FREN.554 Studies in 20th-Century French Theater (3)

A study of the major trends in 20th-century French theater, from the influence of the Surrealist movement and Existentialism to the Theater of the Absurd of the Post-War period and its Kafkaian undertones. (Offered occasionally.)

#### FREN.560 Contemporary Women Writers in France and Quebec (3)

This course focuses on the contributions of women writers to 20th-century Francophone fiction in two countries where feminism has made a mark on intellectual thought: France and Quebec. Selections from the pioneer works of Simone de Beauvoir to the literary experiments of the ‘80s. (Offered occasionally.)

#### FREN.561 French Cinema (3)

A history of French cinema by themes and authors. Examined are the major current directions, including the influence of Surrealism and the Post-Modern, problems in realism and cinematographic genres, the relation of cinema to French politics. Films are shown and discussed. (Offered occasionally.)

#### FREN.563 Studies in Francophone Literature (3)

An over-view of Francophone literature of Africa and the Caribbean, focusing on imperialism, de-colonization and “négritude” as seen in the works of Césaire, Senghor, Bâ, Schwarz-Bart. (Offered occasionally.)

#### FREN.566 Nation, Identity and Culture (3)

This course promotes an understanding of dynamics at play in contemporary French culture by examining how the State has shaped society from the Revolution of 1789 to now. Through various texts and films, students explore the shifting notions of Nation, Identity and Culture during this period. (Offered occasionally.)

#### FREN.567 Post colonialism and Violence (3)

After examining socio-political conditions that produced violence in individual francophone cultures and countries, we will analyze ways in which texts (novels, plays, life narratives and testimonies) and films arouse horror, discomfort, denial or connection in readers and spectators. (Offered occasionally.)

#### FREN.570 Love & Honor in Early Modern France (3)

This course explores the evolution of the concept of honor, as well as the depiction and expression of romantic love. We analyze literary representations of the heroic figure and examine the voice of the lover and the depiction of the beloved, considering the relationship in terms of gender and power. (Offered occasionally.)

#### FREN.571 Women and Writing in Early Modern France (3)

This course introduces students to the role of women in early modern French literature as symbol/image and as writer, through a study of French literary works by and about women. Writers studied include Christine de Pizan, Marguerite de Navarre, Ronsard, Labé, Racine, and Molière. Taught in French. (Offered occasionally.)

**FREN.585 Seminar on Molière (3)**

This seminar endeavors, through a thorough analysis of Molière's plays, to recapture the time, the life and the literary theories of one of the world's best playwrights. DVDs and videos make it possible to first view the plays, then analyze them in light of Aristotelian and modern criticism. (Offered occasionally.)

**FREN.586 The World of Baudelaire (3)**

The study of Baudelaire – poet, art critic, “man of his time” – as a pivotal figure in the transition from “Romanticism” to the “modern” era in France. (Offered occasionally.)

**FREN.587 Exoticism in French Literature (3)**

A cultural critique of French novels from the Eighteenth to the Twentieth Centuries, including works by Montesquieu, Mme de Duras, Chateaubriand, Balzac, Loti, Lévi-Strauss. Discussion of the evolution of exoticism as a genre and representations of exotic in “other” cultures. (Offered occasionally.)

**FREN.593 Special Topics in French (1-3)****FREN.595 Special Study for Examinations (0)****FREN.598 Graduate Reading Course (1-3)****FREN.5CR.90 Master's Degree Study (0)**

## Master of Arts in Spanish

**Kara McBride, Ph.D.,**

*Graduate Program Director*

Our MA program seeks to give the student a generalist foundation in the areas of Spanish Peninsular and Latin American Literature and Culture as well as in the areas of Teaching and Linguistics. Our diverse curriculum makes it possible to gain a solid, up-to-date background in Spanish Studies as well as to broaden the perspective within specific areas of interest.

The program is suited to those planning or already engaged in professional careers such as teaching or international affairs. It also has a record of providing excellent preparation for those electing to continue studies beyond the M.A. degree.

The program is offered on two campuses: in Madrid and in St. Louis. Students may fulfill all or part of the program requirements on either campus. Students wishing to complete the program exclusively in Madrid have two options: they may complete it in three summers extendable to five, or they may complete it there through a combination of summers and the regular spring and fall semesters.

**Prerequisites**

An undergraduate major in Spanish or the equivalent.

**Course requirements**

Of the ten courses required for the degree, two must be in the area of Latin American Studies, two in Peninsular Spanish Studies, and two in Teaching or Linguistics.

**Additional Requirements**

A final written exam over a reading list and the final oral degree exam over coursework.

*A formal minor may be permitted.*

**COURSE DESCRIPTIONS****Graduate Courses****SPAN.501 Teaching College Spanish (0)**

Practice-centered teaching training for college-level Spanish courses. Discussion and application of course development, of current approaches to teaching and of evaluation techniques. Systematic incorporation of technology in the learning process. (Available to Teaching Assistants only. Offered every semester.)

**SPAN.503 Spanish Linguistics (3)**

Synchronic and diachronic analysis of the Spanish Language. Phonological development and morpho-syntactical, lexical and semantic change. Dialects. Discussion of special topics. (Offered occasionally.)

**SPAN.504 Methods and Technology for the Teaching of Spanish (3)**

Study of effective classroom presentation techniques for areas which are major sources of difficulty for instructors and students. Designed specifically to test classroom application of new approaches to old language problems. (Offered every other year.)

**SPAN.507 Spanish Stylistics (3)**

This course presents a theoretical foundation of writing styles as models for extensive practice in descriptive, narrative and analytical modes of written expression. (Offered occasionally.)

**SPAN.508 Learning Texts: Tradition, Authenticity and Virtuality (3)**

This course analyzes the role of textbooks in foreign language classes and how new technologies have changed the concept of publishing. Students will identify desirable characteristics of texts for particular teaching situations, become familiar with technologies that can be used in teaching, and design lessons based on alternative texts. (Offered occasionally.)

**SPAN.518 Contemporary Spanish Culture and Civilization. (3)**

This course provides a study of the nature of Spanish society today, with special emphasis on those events that make Spain unique in relation to other Western countries. Topics of discussion will include elements of the economic, cultural, social and religious life of contemporary Spain. (Offered occasionally.)

**SPAN.519 Contemporary Spanish American Culture and Civilization (3)**

A critical analysis of historical, cultural, political, religious, socio-economic and demographic considerations that have contributed to the Latin American ethos, value system, attitudes, behavior, art and ideas. (Offered occasionally.)

**SPAN.520 Introduction to Literary Criticism (3)**

This course introduces the main schools of contemporary literary criticism. Students then apply these theories to interpret specific works from a variety of genres in Hispanic literature. (Offered occasionally.)

**SPAN.522 Don Quixote by Cervantes (3)**

Study of Cervantes' masterpiece, Parts 1 & 2, with special attention to its literary form and structure. The term Spanish Golden Age, and the concept of the modern novel will be followed by a close textual reading of Don Quixote. A range of critical essays will enrich the study of the primary text. (Taught in Spanish. Offered occasionally.)

**SPAN.524 Short Stories: History, Histories (3)**

This course explores the Latin American short stories written after 1950. This class's approach works to bridge literary texts with cultural production in order to allow for a comprehensive view of the contemporary historical life. The production of authors such as Uslar Pietri, Borges, Juan Rulfo, García Márquez, Julio Cortázar and others is discussed.

**SPAN.526 Latin American “Modernismo” (3)**

A survey course that examines the literary expressions of the debate on Modernity and Modernization in Latin America in the period 1820-1920. Topics such as national identity, the creation of modern cities, the “education of women” and the role of minorities will be examined through an anthology of short stories, articles, poems, essays and comics. (Offered occasionally.)

**SPAN.527 Contemporary Latin American Poetry (3)**

Survey course that analyses a representative group of Latin American poets. Main themes and formal characteristics of these authors will be discussed. (Offered occasionally.)

**SPAN.528 Early Latin American Novel (3)**

Survey course that examines the Latin American novels written between 1890 and 1940. The class presents an overview of the major movements that informed the novels of the period such as Naturalism, Indigenism, the Historicism, Futurism and other Avant-garde trends. The issues of the construction of national identity and the formation of modern "civilized" societies will be addressed. (Offered occasionally.)

**SPAN.529 Boom, Mass Media and Utopia (3)**

This course discusses the Latin American narratives and essays and the birth of media culture in Latin America. The cultural production discussed is implied in the political context of the so-called cold war. Main novels discussed belong to the so-called Boom of novel. (Offered occasionally.)

**SPAN.531 Women Writing Women: Latin American Women Playwrights (3)**

This course focuses on the work of Latin American women playwrights from 1980 until today. Particular attention will be given to the way women represent and perform other women on the stage. (Offered occasionally.)

**SPAN.532 The African Experience in Spanish America (3)**

This course examines the literary contributions of Afro-Hispanic writers from Spanish America and Equatorial Guinea in order to discuss the complexity of the African experience in the Spanish-speaking world from the colonial period to the 21st Century. In addition to the discussion of race and class issues, the class focuses on the subject of Canon formation and Canon exclusion in order to bridge the real and imagined gaps between Afro-Hispanic literature and that written by canonized writers in Spanish America and Spain. (Offered occasionally.)

**SPAN.533 Narratives on the End of Utopias (3)**

This course examines recent Latin American trends that broke up the traditional canon of novel and literary conceptions based on Modernist culture. Categories based on hegemonic discourse and hierarchies are debated. (Offered occasionally.)

**SPAN.535 Counter Hegemony Discourses (3)**

This course bridges Latin American literary and cultural productions that confront the use and abuse of local and international power. Voiceless people speak about their disenchanting life. (Offered occasionally.)

**SPAN.536 Written by Herself: Latin American Women Writers (3)**

This course introduces the students to the work of Latin American women writers from the Colonial period to the 21st century. The discussion will focus on the history of women's education, concepts of beauty, the role of women in society and the construction of women's identity. (Offered occasionally.)

**SPAN.537 Latin American Literature & Film (3)**

A survey course that examines the relationship between some masterpieces of contemporary Spanish American Literature and their adaptations into film by some of the major directors of Latin American cinema. (Offered occasionally.)

**SPAN.538 Cultural Stereotypes: Latin America (3)**

This course is an interdisciplinary approach which confronts stereotypes about Latin American cultures. It involves a vast array of experiences that has established differences, stigmas, and marginalization of Latin Americans. (Offered occasionally.)

**SPAN.539 Contemporary Spanish Women Writers (3)**

This course introduces the student to the study of the narrative written by contemporary Spanish women authors. There will be a specific study, through selected texts, of the most representative movements and tendencies of the post-war narrative and of the various means chosen by the authors to express their literary universe from their condition as women. (Offered occasionally.)

**SPAN.543 Cantar de Mio Cid, Libro de Buen Amor and La Celestina (3)**

Close reading and discussion of three medieval Spanish masterpieces, which have remained modern throughout the ages. Insight into social, historical, literary, and creative issues. (Offered occasionally.)

**SPAN.553 Golden Age Lyric Poetry (3)**

Seminar on the Renaissance and Baroque poets in the sixteenth and seventeenth centuries: Garcilaso de la Vega, Fray Luis de León, San Juan de las Cruz, Luis de Góngora. (Offered occasionally.)

**SPAN.554 Golden Age Drama (3)**

Seminar on the Spanish theater of the 16th and 17th centuries. Analysis of the works of Lope de Vega, Tirso de Molina, Juan Ruiz de Alarcón, Pedro Calderón de la Barca. (Offered occasionally.)

**SPAN.555 Medieval Spanish Jewish Life under Islam and Christianity(3)**

Cultural and literary exchanges among the three groups. The tragic events of 1391. Expulsion, 1492. Forced Baptisms of Portugal, 1497. Converso life in Iberia and the New World. Sephardi life in the Diaspora. (Taught alternatively in Spanish and English. (Offered occasionally.)

**SPAN.561 Nineteenth-Century Poetry and Drama (3)**

Poets: Becquer, Espronceda. Dramatists: Duque de Rivas, García Gutiérrez, Zorrilla. (Offered occasionally.)

**SPAN.562 Nineteenth-Century Novel (3)**

Regionalism and naturalism illustrated in works by Jose María de Pereda, Emilia Pardo Bazán, Juan de Valera, Benito Perez Galdós, Blasco Ibañez, Leopoldo Alas. (Offered occasionally.)

**SPAN.568 Contemporary Spanish Short Story (3)**

This course introduces the students to the general study of the Spanish short story of the twentieth-century after the Spanish Civil War from the seventies to the nineties. The focus will be the most significant tendencies of each period, and their principal authors will be studied. (Offered occasionally.)

**SPAN.570 Twentieth-Century Poetry (3)**

Machado, Salinas, Jiménez, Aleixandre, García Lorca, Blas de Otero, Hierro. Searching for meaning of life in a fragmented world. (Offered occasionally.)

**SPAN.571 Twentieth-Century Novel (3)**

Themes and styles of Camilo José Cela, Carmen Laforet, Ramon Sender, Juan Goytisolo, Elena Quiroga, A.M. Matute, and L.M. Santos. (Offered every other year.)

**SPAN.572 Twentieth-Century Drama (3)**

Casona, Buero, Sastre, García Lorca, Arrabal. Probing into the human condition: especially human mortality. (Offered every other year.)

**SPAN.573 Spanish Literature and Film (3)**

This course explores the connection between the artistic expression of literature and film in modern Spain. Following the reading and discussion of specific literary works, students view and compare a film rendition of the same. (Offered occasionally.)

**SPAN.574 From the Poetry of Knowledge to the Poetry of the Turn of the Century (3)**

Study of how Spanish poetry has recorded the different political, social, and cultural changes in the country during the second half of the twentieth-century to the present. Movements studied include: the poetry of knowledge, the "novísimos," "post-novísimos", the poetry of experience, the new sentimentality, the poetry of silence, and the poetry of the turn of the century. (Offered occasionally.)

**SPAN.575 Spanish Novel After 1970 (3)**

This course introduces the students to the study of the Spanish novel after 1970. The class will begin with the years of transition from dictatorship to democracy. There will be a specific study of the most representative movements and tendencies of the Spanish novel after the seventies, with special emphasis on the period from 1975 until the end of the century. (Offered occasionally.)

**SPAN.577 Carpe Verbum: the Journey of Women Poets in Contemporary Spain (3)**

Historical analysis of Spain's contemporary women poets' struggle with the canon. Literary interpretation of a representative selection of modern and

contemporary Spanish women poets: Rosalía de Castro, Ernestina de Champourcín, Concha Zardoya, Carmen Conde, Gloria Fuertes, María Victoria Atencia, among others. (Offered occasionally.)

**SPAN.593 Special Topics (1-3)**

**SPAN.595 Special Study for Examinations (0)**

**SPAN.598 Graduate Reading Course (1-3)**

Prior permission of professor and chairperson required.

**SPAN.5CR.90 Master's Degree Study (0)**

## PHILOSOPHY

**Theodore R. Vitali, C.P., Ph.D.,**

*Department Chairperson*

The graduate program in the Department of Philosophy offers a range of courses in the history of philosophy with principal emphases on ethics, social and political philosophy, metaphysics and epistemology, and the philosophy of religion. Special resources available to the program include the international philosophical journal, *The Modern Schoolman*; the Vatican Film Library, the only depository of its kind in the Western hemisphere; and the Center for Medieval and Renaissance Studies of Saint Louis University.

### Master of Arts

**Prerequisites**

Eighteen (18) credit hours of undergraduate upper-division philosophy coursework.

**Required Courses**

Thirty (30) credit hours, 21 of which must be graduate hours. Eighteen (18) hours must be in philosophy and 12 of which must be graduate hours. Completion of the systematic synthesis course (3 hours). One hour defense of synthesis paper.

### Master of Arts (Research)

**Prerequisites**

Eighteen (18) hours of upper-division philosophy coursework.

**Required Courses**

Thirty (30) graduate credit hours, 12 of which must cover the ancient, medieval, modern, and contemporary periods. Six graduate credit hours of thesis research. A master's thesis under the direction of a faculty mentor and two readers is required. The thesis requirement is for six (6) hours that count toward the thirty (30) hour requirement.

**Additional Requirements**

Completion of a three-hour written examination on the history of philosophy covering three of the four periods of history. Reading proficiency in French, German or another foreign language at the discretion of student's supervisory faculty committee. One hour defense of thesis.

*A formal minor may be permitted.*

## Doctor of Philosophy

**Prerequisites**

Eighteen (18) credit hours of undergraduate upper-division coursework.

**Required Courses**

Sixty-six (66) credit hours, six of which are prospectus hours and 12 of which are dissertation research hours. The other 54 hours of coursework beyond the bachelor's degree must include: 21 credit-hours in the history of philosophy, namely six in ancient, six in medieval, six in modern and three in contemporary philosophy; 15 credit hours in topics courses to be distributed over three of the following areas: epistemology, metaphysics, ethics, and social and political philosophy, with nine credit hours falling within a chosen area of competence; three hours of advanced logic at 400-level or above (for which a departmental examination may be substituted [but without credit]); nine hours of electives; six credit hours of reading courses on the dissertation topic culminating in dissertation topic prospectus.

**Additional Requirements**

One course permitted at 400-level. A maximum of nine credit hours may be taken in a related discipline. A two-hour oral examination on the dissertation prospectus covering: (i) the relationship between the dissertation topic and the broader discipline, whether contemporary or historical, and (ii) the philosophical import of the topic itself. Reading proficiency in both French and German, or in two other foreign languages at the discretion of the student's supervisory faculty committee.

*A formal minor is permitted.*

### COURSE DESCRIPTIONS

**Upper-Division Course**

**PHIL.493 Advanced Logic (3)**

**Graduate Courses**

The following five courses address the basic questions raised both in the history of philosophy and the contemporary philosophical setting:

**PHIL.500 Introduction to the Graduate Study of Philosophy (0)**

**PHIL.510 Problems in Epistemology (3)**

Topics such as the meaning of truth and knowledge, and the diversity of kinds and contexts of knowing. (Offered occasionally.)

**PHIL.520 Problems in Metaphysics (3)**

Topics such as substance, identity, time, space and being. (Offered occasionally.)

**PHIL.530 Problems in Ethical Theory (3)**

Questions such as how ethical claims are distinctive and whether and how they can be rationally based. (Offered occasionally.)

**PHIL.540 Problems in Social and Political Philosophy (3)**

Topics such as the state, rights, sovereignty, democracy, freedom, property and the meaning of justice. (Offered occasionally.)

**PHIL.580 Systematic Synthesis (3)**

Prerequisite: Advanced standing in the non-research Master's degree program. Discussions of human nature, knowledge, ethics and God culminate in individually formulated syntheses of students' views on the fundamental problems of philosophy. (Offered occasionally.)

**PHIL.593 Special Topics in Philosophy (3)**

**PHIL.595 Special Study for Examinations (0)**

**PHIL.598 Graduate Reading Course (1-3)**

**PHIL.599 Thesis Research (0-6)**

**PHIL.5CR.90 Master's Degree Study (0)**

The following courses consider the philosophical contribution of a major philosopher, distinguished in the problematic area mentioned:

**PHIL.600 Seminar on a Major Philosopher in Ethics (3)**

A philosopher who has made significant contributions to the field of ethics, e.g., Plato, Aristotle, Aquinas, Kant, Mill, Hare. (Offered occasionally.)

**PHIL.605 Seminar on a Major Philosopher in Political Philosophy (3)**

A philosopher important for contributions to political philosophy such as Plato, Aristotle, Hobbes, Locke, Rousseau, Hegel, Marx. (Offered occasionally.)

**PHIL.610 Seminar on a Major Philosopher in Metaphysics (3)**

The metaphysical views of a major figure in the area such as Plato, Aristotle, Augustine, Aquinas, Heidegger or Whitehead are explored. (Offered occasionally.)

**PHIL.615 Seminar on a Major Philosopher in Epistemology (3)**

The epistemological position of a major theorist, such as Descartes, Hume, Kant, Husserl, Habermas, Popper or Peirce is examined. (Offered occasionally.)

The following courses explore on a more advanced plane historical and contemporary philosophical themes:

**PHIL.620 Philosophy of Science (3)**

Major figures and issues in the philosophy of science such as the nature of scientific theory, scientific objectivity or relativism in science. (Offered occasionally.)

**PHIL.622 Advanced Logic (3)**

Prerequisite: PHIL.404 or equivalent. An axiomatic survey of the first-order predicate calculus, and of first-order theories in general, terminating in proofs of Godel's theorems. (Offered occasionally.)

**PHIL.626 Problems in the Philosophy of Religion (3)**

Explores problems such as the nature of God, proofs for God's existence, divine properties, etc. (Offered occasionally.)

**PHIL.630 Advanced Ethics (3)**

Extensive examination of such questions as how ethical claims are distinctive and whether and how they can be rationally based. (Offered occasionally.)

**PHIL.632 Advanced Metaphysics (3)**

Thorough exploration of such topics as substance, identity, time, space and being. (Offered occasionally.)

**PHIL.634 Advanced Epistemology (3)**

Examination in depth of topics such as the meaning of truth and knowledge and the diversity of kinds and contexts of knowing. (Offered occasionally.)

**PHIL.636 Seminar in Political Philosophy (3)**

Exhaustive study of such topics as the state, rights, sovereignty, democracy, freedom, property, and the meaning of justice. (Offered occasionally.)

**PHIL.638 Seminar in Aesthetics (3)**

Analyses of the meaning of beauty and the character of aesthetic judgments. (Offered occasionally.)

The following four courses examine the major philosophical figures and issues pertaining to periods in the history of philosophy:

**PHIL.640 Ancient Philosophy (3)**

An advanced level seminar in which major figures and topics in the ancient period are examined. (Offered annually.)

**PHIL.645 Medieval Philosophy (3)**

Seminar study on a sophisticated plane of major philosophers and issues of the medieval era. (Offered annually.)

**PHIL.650 Modern Philosophy (3)**

Major philosophers and issues of the modern period. (Offered annually.)

**PHIL.655 Contemporary Philosophy (3)**

Major philosophers and issues in contemporary philosophy. (Offered annually.)

**PHIL.680 Prospectus (3-6)**

Prerequisites: Advanced standing in the Ph.D. degree program in Philosophy. A survey of the area of proposed dissertation research. Research questions are posed. Interest in the topic is focused. Culminates in a written prospectus and its oral defense before the potential dissertation committee. (Offered every semester.)

**PHIL.695 Special Study for Examinations (0)**

**PHIL.697 Special Topics in Philosophy (1-3)**

**PHIL.698 Graduate Reading Course (1-3)**

**PHIL.699 Dissertation Research (0-6)**

**PHIL.6CR.99 Doctor of Philosophy Degree Study (0)**

## POLITICAL SCIENCE

**Ellen Carnaghan, Ph.D.,**

*Department Chairperson*

**Christopher Witko, Ph.D.,**

*Director of Graduate Studies*

The Political Science department offers an M.A. and an accelerated B.A./M.A. Students may also pursue a dual degree M.P.A. /M.A. in association with the department of Public Policy Studies. The Political Science department collaborates on a graduate certificate in Global and Local Social Justice. The B.A. /M.A. in Political Science dual degree program offers students the opportunity to complete the B.A. and M.A. degrees in an accelerated 5-year 150 credit hours program of study (120 as an undergraduate, 30 as a graduate student, 6 hours counted towards both degrees). Students who have been admitted for undergraduate study at Saint Louis University and select a major in Political Science may apply in their junior year of study to be admitted to the Master's program to complete the linked graduate degree.

The M.A. program is open to individuals who have previously earned a B.S. or B.A. degree in political science or a related social science discipline from an accredited university and

demonstrate outstanding potential. Students admitted for M.A. study must have an outstanding undergraduate record and demonstrate the potential for senior leadership in Political Science.

In this program, students will advance their knowledge and analytical skills by focusing on an interdisciplinary, problem oriented concentration within the broad field of political science. Students will focus on either Law, Culture, & Politics, or International Affairs.

## Accelerated Bachelor of Arts/Master of Arts

### Prerequisites

Political Science Major, junior standing, and a GPA of at least 3.4

## Master of Arts

### Prerequisites

B.A. or B.S. in political science or a related social science discipline. This should include at least 18 hours of undergraduate political science courses and an undergraduate social science methods course.

### Required Courses

Thirty hours of course work are required. These courses include: Core seminars in the candidate's chosen concentration--either American Politics or International Affairs, 1 core seminar in the other concentration, 1 research methods course, and 4-6 electives beyond the core level in the chosen area of concentration.

Electives are chosen from political science courses and courses in related disciplines. Eighteen hours must be in political science.

*American Politics required core courses are:*

POLS.511 American Political Institutions  
 POLS.575 American Political Thought  
 POLS 593 General Research Methods (or SOC 560 Research Methodology)

*International Affairs core courses are (choose 2 of 3):*

POLS.551 Democratization  
 POLS 569 Theories of World Politics  
 POLS.593 State and Society

### Additional Requirements

Students choose one of four capstone options: 1) MA thesis (6 credit hours); 2) internship, combined with a paper defense (6 credit hours); 3) professional quality paper (0 credit hours); or 4) comprehensive exam (0 credit hours).

## M.P.A./M.A. Dual Degree Program

The M.P.A./M.A. dual degree program unites the American and urban focus of public policy analysis with the broad international and theoretical concerns of political science. There are a total of 51 hours of course work required for the M.P.A./M.A. The required courses are:

PPS 540 Organizational Theory and Behavior (3)  
 PPS 515 Economics of the Public Sector (3)  
 PPS 512 Introduction to Public Sector Budgeting (3)  
 PPS 541/POLS 541 Administrative Law (3)  
 PPS 503 Issues in Public Administration (3)  
 PPS 501 Research Methods (3)

Three core classes, with two from either the Law, Culture, and Politics of the International Affairs concentration and one from the other (6)

Internship (3)  
 Political Science electives (9)  
 Public Policy electives (9)  
 Capstone (3)

### Graduate courses

#### **POLS. 500/PPS.500 The Metropolis (3)**

Seeks to impart an understanding of the political and governmental process at the local levels of American government (city, county special district and metropolitan area). Utilizes problematic topical areas (e.g. fiscal problems, political behavior, socio-demographic change) as organizing themes for study and seminar discussion.

#### **POLS.510 Theories of Constitutional Interpretation (3)**

Course explores justification for judicial review in the U.S. Why, in a democratic system, do unelected judges possess the power to invalidate laws approved through the democratic process? Students read historical, legal, philosophical, and empirical works and develop their own ideas about the role of constitutional courts.

#### **POLS.511 American Political Institutions (3)**

Course examines design and contemporary function of America's political institutions, including the three constitutionally-defined branches of government, parties and interest groups. Historical and contemporary readings on the organization of Congress and the Executive; mobilization of societal interests for political action; how representative and responsive these institutions are; whether they produce "good" policy.

#### **POLS.514 Political Parties and Interest Groups (3)**

Course examines the activities of parties and interest groups and explores how these organizations shape politics and policy outcomes. We consider the causes and consequences of party conflict, whether the interest group system is biased toward particular interests, etc.

#### **POLS. 518 Graduate Internship (1-3)**

Interns work in government agencies/offices, nonprofit organizations, or interest groups under the guidance of a preceptor from the sponsoring organization and under a course director from the political science department who develop a graduate level professional experience following department internship guidelines. (Offered every semester.)

#### **POLS.541/PPS. 541 Administrative Law (3)**

Seminar discussions focus on the search for procedural due process in public administration. Specific Attention is devoted to administrative law doctrines and principles pertaining to rule-making, agency hearings administrative discretion, damage actions, reviewability, scope of review, and administrative searches and seizures. Administrative law cases are thoroughly discussed. (Offered every spring semester.)



**POLS.542/PPS. 670 Law and Society (3)**

Examination of the complexities and concerns inherent in sociological and legal understanding of the relationship between law and society. (Offered occasionally.)

**POLS.550 Russian Political Culture (3)**

This course examines the fundamental political beliefs and values of Russians, focusing on whether Russians today have the right attitudes to sustain democratic institutions. To understand what people think, we examine various kinds of sources: works of fiction, political philosophies, historical analyses, first-hand accounts, ethnographies, and quantitative public opinion studies.

**POLS.551 Democratization (3)**

This course examines the nature of democracy and the recent trend toward democratic reform, focusing especially on the experiences of Central Europe and Latin America. The course also examines the relationship between political and economic reform and between democratic and market systems.

**POLS.562 Global Diplomacy (3)**

The course is concerned with the kind of diplomacy that enables international actors to address the problems confronting international society: problems addressed include peace and security; the maintenance of order in the world; economic stability; sustainable development; and the protection of human rights, the environment, and global social justice.

**POLS.566 Asymmetric Warfare in Two Eras: Vietnam & The Cold War vs. Iraq and the War on Terror (3)**

This course examines the lessons of Western intervention in Vietnam and other insurgencies during the Cold War with the view of assessing their relevance to the two Gulf Wars and other interventions of the 9/11 era.

**POLS.569 Theories of World Politics (3)**

An advanced field seminar of the theories of world politics. Students will read, discuss, and write about key writings in the basics of the field, borrowing from other disciplines and contemporary critiques. Coverage includes realism, liberalism, political economy, political psychology, international security, Marxism, critical studies, constructivism, and feminism.

**POLS.573 Contemporary political ideologies (3)**

Development of modern political ideologies from mid-nineteenth century to present. Course focuses on ideas and social-political contexts associated with ideologies such as liberalism, Marxism, feminism, green politics, and liberation theology. Students consider the ramifications of viewing the world through particular ideological lenses.

**POLS.575 American Political Thought (3)**

Major issues and trends in American political thought from the founding era to the present. Course examines values and assumptions underlying different political theories with the goal of understanding their utility as descriptions of, or prescriptions for, democracy in America. Students consider how different theories of democracy include or exclude persons of different races, classes, and genders.

**POLS.584 Politics of Health (3)**

Course offers students political and analytical insights into understanding health policy issues in the U.S. and developing world. It examines how power relations and values affect choices on health issues. Of particular interest in this course is the AIDS pandemic in Africa.

**POLS.585 Politics of the Future (3)**

This course examines the gap between the "is" and the "ought" of political systems, and portrays the politics of the future as emerging from human choice based on core values. Students will then construct their own future systems based on their core values.

**POLS. 586 Political Thought of Asia (3)**

Prerequisites: an undergraduate course each on Western political thought and on Asia. An examination of the political thought of Asia that has emerged from three eras: the traditional pre-Western order, the onslaught of European colonialism, and the independent Asia that arose after World War II. The focus will be on China, Japan, and India.

**POLS.588 Graduate Capstone Internship (3-6)**

Interns work in government agencies/offices, nonprofit organizations, or interest groups under similar conditions to POLS 578. In addition, interns

prepare either a Policy Recommendation Paper, formal Grant Proposal, or a Professional Quality Paper as specified in department capstone guidelines. (Offered every semester.)

**POLS.595 Study for Special Exams (0)**

Required of all M.A. students in the final semester.

**POLS.598 Graduate Independent Study (1-3)**

Students embark on a course of individual study on a course not available in the regular curriculum in an area of faculty expertise. Schedule and workload are to be determined by the faculty instructor in accordance with the mutually agreed upon pedagogical objectives of the course. (Offered every semester.)

**POLS.599 Thesis Research (0-6)**

Master's thesis research, for students completing a Research MA.

**POLS.670/ASTD.670 Advanced Seminar in American political thought: Imagining Rights (3)**

Focuses on selected ideas, issues and institutions that have been central to the U.S. Constitution and the practice of American constitutionalism, from the founding era to the present. Readings emphasize seminal works in American political thought, which are supplemented by historical accounts, illustrative literature, and contemporary analyses. The course centers on "rights" built upon foundational documents and principles as these rights have been experienced by particular marginalized groups. (Offered occasionally.)

**POLS.671/ASTD.671 Leadership and Culture (3)**

Focuses on how culture both constrains and empowers leaders as they attempt to influence various publics. Students examine political leaders and leaders of social movements primarily in U.S. history, with an eye toward the connections between their policies, their rhetoric, and the institutional and cultural contexts in which they act. (Offered occasionally.)

## Graduate Global and Local Social Justice Certificate

**Robert Strikwerda, Ph.D.,**  
*Director*

The certificate aims to provide graduate students with an understanding of the social and political institutions and processes that advance or inhibit social justice. Through interdisciplinary study of social systems, political institutions, public policies, cultural values, and processes of change, students will become familiar with structures that expand or impede material welfare, racial and gender equality, individual human rights, and other components of a just society. The Global and Local Social Justice certificate is a cooperative program that draws required or elective courses from several departments and programs, including American Studies, Political Science, Public Policy Studies, Sociology and Criminal Justice, Social Work, and Women's Studies.

To be admitted to the certificate program, students must have been accepted into a graduate degree program at Saint Louis University. Ordinarily, students in the certificate program must have a minimum 3.0 undergraduate GPA and will have taken at least fifteen hours of undergraduate course work in the social sciences. They will also need to meet any prerequisites for the courses they plan to take. A student's enrollment in the certificate program must be approved by the certificate program director and by the director of the student's home program. The director will also advise students on the best order in which to take courses and on which courses may not be offered regularly.

## Requirements of the Graduate Certificate in Global and Local Social Justice

The Graduate Global and Local Social Justice certificate consists of 15 hours of classes, including:

One class in theories of justice. *Choose from:*

POLS.573 Contemporary Political Ideologies

POLS.575 American Political Thought

POLS.593 Structures of Power/Structures of Thought

ASTD.670/POLS.670 Seminar in American Political Thought

WSTD.501 Feminist Theory

One class in stratification/structures of inequality. *Choose from:*

ASTD.527 Anti-Black Racism

ASTD.540 Metropolitan America

ASTD.639 Race, Rights & American Identity

PPS.576 Poverty Policy

SOC.540 Race, Gender, Class and Criminal Justice

SOC.550 Social Stratification

SOC.551 Constructing Social Problems

SWRK.715 Social Work Practice with Low Income Families and Neighborhoods

SWRK.716 Diversity and Anti-Oppression Practice

One class in global issues. *Choose from:*

POLS.584 Politics of Health

PPS.493 Structure of Poverty - Global and Local

SWRK.703 International Social Work: Mexico/Ghana

One class in processes of change. *Choose from:*

POLS.550 Democratization

POLS.562 International Organization and the Management of World Problems

POLS.671 Leadership and Choice

PPS.500 The Metropolis

PPS.605 Policy Ethics / Social Responsibility

SWRK.702 Social Policy

Electives

SWRK.701 Social Justice: Human Liberation and Community Building

SWRK.717 Foundations of Nonviolent Peacemaking

SWRK.793 Social Work in an International Context

SWRK.768 Health and Mental Health Policy

SWRK.798 Non-Profit Management

PPS.540 Organizational Theory and Behavior

Students also may select electives from the classes listed in the four required issue areas. No more than nine of the fifteen required hours may be taken in a single department. Other courses may be substituted with the approval of the program director.

In addition to the fifteen hours of coursework, all students must successfully complete a 0-credit capstone requirement (graded pass/fail). Each student will give a public presentation that reflects on and integrates the themes of the various courses that he or she took as part of the certificate program. The presentation will be based on a paper written in one of the classes taken as part of the certificate

## Psychology

**Jeffrey D. Gfeller, Ph.D.,**

*Department Chairperson*

**Kimberly Powlishta, Ph.D.,**

*Graduate Director, Experimental Program*

**Michael J. Ross, Ph.D.**

*Graduate Director, Clinical Program*

**Edward J. Sabin, Ph.D.,**

*Graduate Director, Industrial-Organizational Program*

## Experimental Program Master of Science (Research)

### Prerequisites

Minimum of 18 credit hours of advanced undergraduate courses in psychology, including statistics and research methods.

### Required Courses

Six credit hours of Research Methodology and Statistics; this requirement must be fulfilled by taking PSY.508 Advanced Quantitative Research Methods, and PSY.579 [course number change approved by Dean Andress in early Spring 2011 semester) Applied Univariate Statistics in Behavioral Science. Six credit hours of program core; choose two courses from the following list:

PSY.512 Memory and Cognition

PSY.513 Neuroscience

PSY.530 Advanced Social Psychology

PSY.525 Cognitive Development

PSY.526 Social Development

Twelve credit hours of electives

Six credit hours of thesis research (PSY.599)

PSY.595 (Special Study for Exams; 0 credit hours) during semester in which thesis is defended

### Additional Requirements

Continuous enrollment in PSY.584 (Experimental Psychology Research Vertical Team)

## Doctor of Philosophy

### Prerequisite

Masters of Science (Research) in Psychology or equivalent

### Required Courses

Statistics and research methods: 12 credit hours minimum at the graduate level (which must include PSY.508, PSY579, and PSY650)

Program Core: 12 credit hours of coursework from the following core areas:

Cognitive Psychology: PSY.512 (Memory and Cognition)

Developmental Psychology: PSY.525 (Cognitive

Development) or PSY.526 (Social Development)  
 Neuroscience: PSY.513  
 Social Psychology: PSY.530  
 Concentration core: 9 credit hours within a student's concentration area (Cognitive Neuroscience, Developmental Psychology, or Social Psychology). For Cognitive Neuroscience and Social Psychology students, this requirement is met by completing three 600-level seminars (in cognition/neuroscience or social psychology, respectively); for Developmental Psychology students, this requirement is met by completing PSY.525 or PSY.526 (whichever was not taken to complete the Program Core requirement) and two 600-level developmental psychology seminars.  
 Concentration electives: 6 credit hours of additional graduate level coursework in any of the Experimental concentrations and/or the teaching of psychology.  
 One credit hour in Human Diversity (PSY.603)  
 One credit hour in Research Ethics (PSY.680)  
 Twelve credit hours of dissertation research (PSY.699)  
 Successful completion of the written preliminary and the oral qualifying exams (enrolling in PSY.695, Special Study for Exams, while completing each exam).  
 Continuous enrollment in PSY.584 (Experimental Psychology Research Vertical Team).  
*Note: Some of the coursework required for the Ph.D. may be completed as part of the MS-R requirements.*

## *Industrial-Organizational* *Program* Master of Science (Research)

### **Prerequisites**

Minimum of 18 credit hours of advanced undergraduate courses in psychology, including statistics and research methods.

### **Required Courses**

A total of 30 credit hours of graduate level, program approved courses including:  
 PSY.508 Advanced Experimental Methods (3)  
 PSY.593 Analysis of Variance and Experimental Design (3)  
 PSY.650 Multivariate Analysis (3)  
 PSY.546 Advanced Organizational Psychology (3)  
 PSY.599 Masters Thesis Research (6)  
 Program Electives (12)

### **Additional Requirements**

Participation in research/professional group each semester.

## Doctor of Philosophy

### **Prerequisite**

Master of Science (Research) in Psychology

### **Required Courses**

PSY.603 Human Diversity (1)  
 PSY.680 Ethics and Professional Issues (1)  
 PSY.699 Dissertation Research (12)  
 Graduate level statistics and research methods (15)  
 Graduate level, program approved, industrial-organizational courses (33)

### **Additional Requirements**

Involvement in research/professional practice activities each semester.

Written and oral preliminary examinations.

Additional curricular information is available from the Industrial-Organizational program director.

## **COURSE DESCRIPTIONS**

### **Graduate Courses**

#### **PSY.503 Clinical Assessment I (3)**

Theory, research, and concepts in clinical assessment, with emphasis on cognitive abilities. (Offered every Fall semester.)

#### **PSY.504 Clinical Assessment II (3)**

Prerequisites: PSY.503 and permission of Instructor. Theory, research and concepts in assessment of personality and behavioral disorders for individuals and groups. (Offered every Spring semester.)

#### **PSY.508 Advanced Quantitative Research Methods (3)**

Pre-requisite: graduate status in psychology or permission of instructor. This course is designed to strengthen and extend students' foundational knowledge of the general principles involved in doing quantitative research in psychology. Topics covered include the measurement of behavior and mental processes (e.g., operational definitions, modalities of measurement (self report, observational, physiological), measurement reliability and validity); research settings (laboratory, field); research designs (experimental, correlational, quasi-experimental); types of experimental control; internal and external validity; sampling; power and design sensitivity; analysis, interpretation, and reporting of data within various research designs; and research ethics. (Offered every Fall semester.)

#### **PSY.509 Psychometric Theory (3)**

Prerequisite: graduate status in psychology or permission of instructor. This course provides an overview of the concepts and issues central to an understanding of psychological measurement. Topics for the course include an overview of basic statistical concepts, scaling, item and test construction, scoring algorithms, item analysis, reliability and generalizability theory and application, validity, prediction and classification, analysis of test dimensionality including factor analysis, test refinement and revision, evaluation of test bias, and item response theory. Emphasis is placed on application of theoretical foundations to practical problems in the aforementioned areas. Following completion of the course, students should be able to critically examine the psychometric properties of tests and write proposals pertinent to test development, refinement, and evaluation. (Offered every Spring semester.)

#### **PSY.510 History of Psychology (3)**

Survey of major events, people and ideas in the history of psychology, primarily since 1860. Emphasis on original sources and historical research. (Offered annually.)

#### **PSY.512 Memory and Cognition (3)**

This course is designed to provide an overview of basic cognitive skills and abilities, focusing primarily on memory function. Contemporary theories and models of memory and language are discussed. (Offered annually.)

#### **PSY.513 Neuroscience (3)**

Physiological and neural correlates of normal animal and human behavior with emphasis on a broad spectrum of areas within neuroscience. (Offered annually.)

#### **PSY.522 Lifespan Developmental Psychology: Clinical Implications (3)**

Prerequisites: Psychopathology, assessment, and intervention clinical coursework and permission of the instructor. Survey of cognitive, social, and emotional growth across the lifespan and cultural forces that influence development at different stages. Clinical implications (psychopathology, 72 assessment, intervention) are addressed for each developmental stage. (Offered every other Fall semester.)

**PSY.525 Cognitive Development (3)**

This seminar is designed to selectively introduce students to major theories, concepts, and recent and classic empirical research in the field of cognitive development, with an emphasis on normative development during infancy and childhood. (Offered every other Fall, alternating with PSY.526.)

**PSY.526 Social Development (3)**

This seminar is designed to selectively introduce students to major theories, concepts, and recent and classic empirical research in the field of social development, with an emphasis on normative development during infancy and childhood. (Offered every other Fall, alternating with PSY.525.)

**PSY.527 Personality Assessment (3)**

Prerequisite: Permission of Instructor. Selected tests, measurements, and projective devices designed for use in evaluation and remediation of emotional and learning deficits; both theory and practice. (Offered occasionally.)

**PSY.530 Advanced Social Psychology (3)**

Contemporary and classic theory and research in social psychology. Topics include attitude formation and change, social influence, social cognition, attribution, self and social identity, prejudice and stigma, inter-group conflict, interpersonal attraction and relationships, altruism, and aggression. (Offered every Fall and Spring semester.)

**PSY.531 Advanced Personality Theory (3)**

Examines in depth a variety of personality theories comparing and contrasting them on a number of construction, substance and validation issues. (Offered annually.)

**PSY.541 Industrial Psychology (3)**

Personnel selection, job analysis, criterion determination and combination, predictive and concurrent validity applied to selection, pre-employment selection, procedures, performance appraisal, job satisfaction, etc. Methodology stressed. (Offered occasionally.)

**PSY.546 Advanced Organizational Psychology (3)**

Examination of organizational theory with special emphasis on systems theory. Topics include history subsystems, growth, role theory and organizational models cover organizational behavior such as motivation, leadership and change. (Offered annually.)

**PSY.547 Psychology of Small Groups (3)**

Prerequisite: Limited enrollment by permission of Instructor. Theory, research and practice in small group behavior. Use of laboratory experiential learning methodologies. (Offered annually.)

**PSY.552 Psychopathology (3)**

Prerequisite: Abnormal Psychology. Permission of instructor. Survey of psychopathology, primarily emphasizing etiology with secondary emphasis on taxonomy. (Offered every Fall semester.)

**PSY.561 Clinical Interventions (3)**

Prerequisite: Permission of Instructor. Studies of the theoretical, empirical, and conceptual foundations of clinical interventions, including outcome, client, and therapist variables and processes. (Offered every Spring semester.)

**PSY.567 Behavior Therapy (3)**

Prerequisite: Permission of Instructor. Concepts and applications of models derived from learning theory and oriented toward changing behavior, including systematic de-sensitization, implosive therapy, covert sensitization and covert reinforcement, assertion training, aversion therapies, token economics, and contingency contracting. (Offered occasionally.)

**PSY.578 Program Evaluation (3)**

Prerequisite: Permission of Instructor. Social action research theory and strategy: emphasis on current methods and models of program evaluation. (Offered annually.)

**PSY.580 Clinical Assessment Practicum I (0)**

Supervised clinical experience in the administration, scoring and interpretation of individual tests of intelligence and academic achievement. (Offered every Fall semester.)

**PSY.581 Clinical Practicum I (0-3)**

Supervised clinical experience in psychological assessment and intervention with individuals, couples, and families representing a variety of problems and developmental stages (i.e., children, adolescents, adults). (Offered annually.)

**PSY.582 Clinical Practicum II (0-3)** Supervised clinical experience in psychological assessment and intervention with individuals, couples, and families representing a variety of problems and developmental stages (i.e., children, adolescents, adults). (Offered annually.)

**PSY.583 Clinical Assessment Practicum II (0)**

Supervised clinical experience in the administration, scoring, and interpretation of objective and projective psychological tests. (Offered every Spring semester.)

**PSY.584 Experimental Psychology Research Vertical Team (0)**

Supervised experience in conducting, discussing, and presenting research and integrating research in experimental psychology with other professional issues. (Offered every semester.)

**PSY.585 Practicum: Applied Psychology (0-6)**

Supervised experiences in the application of social action research theory and strategy. (Offered annually.)

**PSY.586 Clinical Research I (0-3)**

Presents an overview of current research in psychology, particularly clinical psychology, with focus on research ethics, conceptualization, method, and statistics. (Offered annually.)

**PSY.587 Clinical Research II (0-3)**

Prerequisite: PSY.586. A focused presentation of an area of current research in psychology, particularly clinical psychology. Special emphasis is placed on the implementation of research projects from data collection through analysis, to written completion and publication. (Offered annually.)

**PSY.588 Practicum: Psychopathology (0-3)**

Prerequisite: PSY.582. Supervised diagnostic clinical practicum.

**PSY.589 Clerkship: Clinical Psychology (0)**

**PSY.579 Applied Univariate Statistics in Behavioral Science (3)**

Prerequisite: graduate status in psychology or permission of instructor. This course is designed to strengthen students' foundational knowledge of popular applications of statistical analytic techniques in behavioral science, with emphasis on classical univariate inferential techniques. Topics covered include a review of probability theory and sampling distributions, data evaluation, correlation, multiple regression, analysis of variance (ANOVA), and categorical data analysis and other nonparametric approaches. Emphasis of the course will be placed on conceptual knowledge, application, and interpretation of the results. (Offered every Fall semester.)

**PSY.595 Special Study for Examinations (0)**

**PSY.597 Research Topics (1-3)**

Prior permission of guiding professor and department/program chairperson required.

**PSY.598 Graduate Reading Course (1-3)**

Prior permission of guiding professor and department/program chairperson required.

**PSY.599 Thesis Research (0-6)**

**PSY.5CR.90 Master's Degree Study (0)**

**PSY.600 Teaching of Psychology (3)**

Reading, lectures and supervised experience designed to prepare the student for teaching psychology at the college level. (Offered occasionally.)

**PSY.603 Human Diversity (1-3)**

Introduces students to psychological theory and research in individual and cultural diversity and considers human diversity as it relates to teaching, research, consulting, and clinical service. Delivered in three, one-semester hour modules. Module one is an introduction and overview. Module Two experientially focuses on teaching and research. Module Three examines issues and applications in professional practice. (Offered annually)

**PSY.604 Topics: Assessment (3)**

Survey of selected measures and research. (Offered occasionally.)

**PSY.606 Topics: Quantitative Psychology (3)**

Selected topics from the quantitative aspects of psychology, such as information theory, decision theory, Bayesian analysis, computer applications, etc. (Offered occasionally.)

**PSY.619 Topics: Cognitive Neuroscience (3)**

Advanced seminar in newly developing areas of cognition and neuroscience. (Offered every Spring semester.)

**PSY.629 Topics: Developmental Psychology (3)**

Advanced seminar in selected areas of developmental psychology. (Offered every Spring semester.)

**PSY.639 Topics: Social Psychology (3)**

Advanced topics and current research/theory in specialized areas of social psychology, including attitudes, self and social identity, social cognition, health, relationships, and prejudice. (Offered every Spring semester.)

**PSY.649 Topics: Organizational Psychology (3)**

Advanced seminars in organizational change and development, organizational intervention, training and development, and newly developing areas in organizational psychology. (Offered annually.)

**PSY.650 Applied Multivariable and Multivariate Statistics in Behavioral Science (3)**

Prerequisite: PSY 594 or equivalent. This course will survey multivariable and multivariate techniques commonly used in behavioral science. Topics covered include multiple regression, MANOVA, logistic regression, time-to-event analysis, canonical correlation, principal components analysis, factor analysis, and discriminant function analysis, with a brief introduction to structural equation modeling. Emphasis of the course will be placed on conceptual knowledge, application, and interpretation of the results. (Offered every Spring semester.)

**PSY.652 Clinical Child Psychology (3)**

Prerequisite: PSY.504 or equivalent. Study of diagnostic and assessment processes and approaches with children and adolescents. Equal emphasis on recent literature pertaining to research and to practice. (Offered annually.)

**PSY.659 Topics: Psychopathology (3)**

Advanced seminar on newly developing areas of research and theory in psychopathology. (Offered occasionally.)

**PSY.660 Structural Equation Modeling (3)**

Prerequisite: PSY 650 or SOC 610. This is an introductory structural equation modeling course that will cover path analysis, confirmatory factor analysis, and analysis of full structural equation models using latent variables. Emphasis is placed on application, interpretation, and presentation of results using computer software programs (offered every other year).

**PSY.663 Consultation Skills: Theory and Practice (3)**

Theories, types and goals of consultation as well as relevant research associated with each type of consultation. Primary focus on training in systems consultation and its evaluation. (Offered every summer.)

**PSY.665 Theories of Child Psychotherapy (3)**

Study of diverse approaches to intervention with children and adolescents. Equal emphasis on recent literature pertaining to research and to practice. (Offered occasionally.)

**PSY.A666 Psychodynamic Psychotherapy (3)**

Theoretical and empirical literature pertaining to psychodynamic orientations in various modes of psychotherapy. (Offered occasionally.)

**PSY.668 Neuropsychological Assessment (3)**

An overview of the specialty area of neuropsychology. Emphasis is placed on understanding functional neuroanatomy and disorders with known neurobehavioral sequelae. Several approaches to assessment of neuropsychological functioning are reviewed. (Offered every Summer.)

**PSY.669 Topics: Intervention Strategies (3)**

Advanced seminar in newly developing areas of intervention strategies. (Offered occasionally.)

**PSY.678 Community Psychology and Primary Prevention (3)**

Prerequisite: Permission of Instructor. Concepts and methodologies relating clinical psychology to community problems, including welfare and dependency, crime and delinquency, urban and rural poverty, and problems of aging. (Offered occasionally.)

**PSY.679 Topics: Applied Psychology (3)**

Advanced seminar in newly developing areas of evaluative/applied psychology. (Offered occasionally.)

**PSY.680 Ethics and Professional Issues (1-3)**

Ethical standards and issues for psychologist regarding research with human subjects and current ethical and professional issues as they relate to the field of psychology. Separate sections are offered for the experimental or industrial/organizational and the clinical programs. (Offered annually.)

**PSY.681 Clinical Practicum III (0-3)**

Supervised clinical experience with children, adolescents, adults, couples, families, and groups covering administration, scoring, advanced interpretation, integration, report writing, case conceptualization of traditional and specialized assessment instruments, and advanced psychotherapeutic interventions for individuals couples, families, and groups. (Offered annually.)

**PSY.682 Clinical Practicum IV (0-3)**

Supervised clinical experience with children adolescents, adults, couples, families and groups emphasizing advanced utilization of client appropriate assessment instruments, advanced utilization of various psychotherapeutic interventions, provision of consultation, and supervised experience in providing supervision to first and second year clinical graduate students. (Offered annually.)

**PSY.685 Internship In Applied Psychology (0)**

Prerequisites: PSY.578 and permission of Instructor. Student must register during their period of internship. (Offered occasionally.)

**PSY.686 Advanced Clinical Research I (0-3)**

Prerequisite: PSY.587. Presentation of focused areas of current research in psychology, particularly clinical psychology. Emphasis is placed on developing advanced knowledge skills of conceptualization methodology and statistics. (Offered annually.)

**PSY.687 Advanced Clinical Research II (0-3)**

Prerequisite: PSY.686.

**PSY.688 Practicum: Clinical Interventions (0-3)**

Prerequisite: Permission of Instructor. Applied course in the methods, techniques and practice of psychotherapy.

**PSY.689 Internship: Clinical Psychology (0)****PSY.695 Special Study for Examinations (0)****PSY.697 Research Topics (1-3)**

Prior permission of guiding professor and department/program chairperson required.

**PSY.698 Graduate Reading (1-3)**

Prior permission of guiding professor and department chairperson required.

**PSY.699 Dissertation Research (0-6)****PSY.6CR.99 Doctor of Philosophy Degree Study (0)**

# CLINICAL PSYCHOLOGY

**Michael J. Ross, Ph.D.,**

*Program Director*

**Jeffrey D. Gfeller, Ph.D.,**

*Admissions Coordinator*

The graduate training program in Clinical Psychology is accredited by the American Psychological Association (APA, 750 First Street, NE, Washington, D.C. 20002-4242; phone 202-336-5979; <http://apa.org/ed/accreditation>). The program is grounded in the scientist-practitioner model with equal emphasis on research and clinical practice. The program is designed to prepare clinical psychologists to function in academic or multidisciplinary health care settings, providing clinical and research services. Integration of theory, research, methodology, and clinical practice is accomplished through academic coursework, clinical experience, clinical and research teams, and internships. Clinical training is obtained in the Department's Psychological Services Center.

The graduate program in Experimental Psychology includes three concentration areas: Cognition and Neurosciences, Developmental Psychology, and Social Psychology. All areas integrate theory and research in courses, research, and professional experiences. The concentration in Cognition and Neurosciences emphasizes training and research in the areas of memory, language production, cognitive aging, sleep, and the neurobiology of learning. The concentration in Developmental Psychology emphasizes the study of emotional, social, and gender role development in children, and cross-cultural and cross-national studies of gender roles and adolescent development. The concentration in Social Psychology includes the study of attitudes and persuasion, close relationships, racial identity and prejudice, self and social cognition, and the social psychology of health.

The graduate program in Industrial-Organizational Psychology prepares doctoral-level professionals with the knowledge, research abilities, assessment skills, and intervention approaches to impact organizational issues at the individual, group, and system levels to improve individual well-being, group functioning, and organizational effectiveness

## *Clinical Program*

### Master of Science (Research)

#### **Prerequisites**

Minimum of 18 credit-hours of advanced undergraduate courses in psychology, including statistics and research methods.

#### **Required Courses**

Statistics and research methods: nine credits minimum at the graduate level. Thesis research: six credit hours.

#### **Additional Requirements**

PSY.503 Clinical Assessment I (3)  
 PSY.504 Clinical Assessment II (3)  
 PSY.552 Psychopathology (3)  
 PSY.561 Clinical Interventions (3)  
 PSY.680 Ethics and Professional Issues (3)  
 PSY.561 Clinical Practicum I (3)  
 PSY.562 Clinical Practicum II (3)  
 PSY.586 Clinical Research I (0)  
 PSY.587 Clinical Research II (0)  
 PSY.580 Clinical Assessment Practicum I (0)  
 PSY.583 Clinical Assessment Practicum II (0)  
 PSY.588 Psychopathology Practicum (0)  
 PSY.688 Clinical Interventions Practicum (0)

## Doctor of Philosophy

#### **Prerequisite**

Master of Science (Research) in Psychology or equivalent.

#### **Required Courses**

Statistics and research methods: twelve credit hours minimum at the graduate level. Dissertation research: twelve credit hours.

#### **Additional Requirements**

PSY.510 History and Systems (3)  
 PSY.639 Human Diversity (3)  
 PSY.513 or 593 Biological Aspects of Behavior (3)  
 PSY.519 Cognitive-Affective Bases of Behavior (3)  
 PSY.530 Social Aspects of Behavior (3)  
 PSY.629 Lifespan Developmental Clinical Psychology (3)  
 PSY.582 Clinical Practicum II (3)  
 PSY.681 Clinical Practicum III (3)  
 PSY.682 Clinical Practicum IV (3)  
 PSY.587 Clinical Research II (0)  
 PSY.686 Advanced Clinical Research I (0)  
 PSY.687 Advanced Clinical Research II (0)  
 PSY.669 Internship in Clinical Psychology (0)  
 Electives (15)

# SOCIOLOGY AND CRIMINAL JUSTICE

**Richard A. Colignon Ph.D.,**  
*Department Chairperson*

The Department of Sociology and Criminal Justice offers a Master of Arts with concentration in Public Sociology. The program provides students with the analytic and administrative skills to advance in leadership positions in the public, private and government sectors. The program is distinctive in its blend of academic and practical skills. Courses are taught by an interdisciplinary faculty from Sociology and Public Policy. Students learn from a faculty that is both outstanding scholars and have practical experience. The faculty is engaged in cutting edge research and this research experience is brought into the class room to enrich and enliven the education of the students. The students benefit from the integration of theory and the practical and empirical skills needed in 21st century organizations.

The M.A. degree consists of 33 semester-hours of coursework and a thesis or a written comprehensive examination (non thesis option). Twenty-seven of the 33 credit-hours are required: six hours of electives are required of those taking the non-thesis option.

## Master of Arts in Public Sociology

### Prerequisites:

An undergraduate degree in the social sciences is anticipated but not required. A research methodology quantitative analysis course is anticipated but not required.

### Required and Elective Courses:

**SOC.501 Organizational Theory and Behavior**  
**SOC.510 Pro-seminar**  
**SOC.520 Urban Ecology: Neighborhood**  
**SOC.525 Elementary Forms of Urban Life**  
**SOC.531 Issues in Jurisprudence**  
**SOC.532 Issues in Law Enforcement**  
**SOC.533 Issues in Corrections**  
**SOC.540 Race, Gender, Class and Criminal Justice**  
**SOC.550 Social Inequality**  
**SOC.551 Constructing Social Problems**  
**SOC.552 Sociological Social Psychology**  
**SOC.553 Urban Ethnography**  
**SOC.554 Environmental Impact of the City**  
**SOC.560 Research Methodology**  
**SOC.561 Death Investigation**  
**SOC.564 Social Demography**  
**SOC.565 Introduction to GIS**  
**SOC.566 Intermediate GIS**  
**SOC.567 Spatial Demography**  
**SOC.580 Survey Design and Sampling**  
**SOC.585 Program Evaluation and Assessment**

**SOC.589 Reading Statistics in Research**  
**SOC.601 Quantitative I: Applied Inferential Statistics**  
**SOC.610 Regression Analysis and Non-linear Models**  
**SOC.620 Nonparametric Statistical Analysis**

### Course Descriptions:

#### **SOC.501 Organization Theory and Behavior**

This course provides a historical survey of the major approaches to the study of organizations and their environments. A historical perspective identifies the theoretical trajectories in the study of organizations from the early twentieth century to the present. Major attention is given to the developing image of the organization and--by extension--the understanding of the nature, causes, and consequences of policy. The focus relates policy to organizational and institutional structures of effectiveness, coordination and motivation.

#### **SOC.510 Pro-seminar**

This course is designed to provide beginning graduate students with an introduction to crucial aspects of academic and professional careers in the social sciences, particularly in Sociology and Criminal Justice.

#### **SOC.525 Elementary Forms of Urban Life**

This course covers advanced topics in comparative urban theory. This course consists of seminars and lectures. Topics to be covered include: spatial theories of concentration of disadvantages, urban capitalism, social suffering and social exclusion..

#### **SOC.531 Issues in Jurisprudence**

This course focuses on how the courts operate and fit within our democracy. Students will gain an understanding of the Constitutional guarantees including the Due Process Clause and the Equal Protection Clause and various guarantees contained in the Bill of Rights. No prerequisite.

#### **SOC.532 Contemporary Issues in Law Enforcement**

We study the administration of law enforcement agencies, emphasizing the process, role, organization, and management of policing organizations. Specifically, we will pay particular attention to its history, innovations, the rationale for change, and impediments to policy and program implementation. No prerequisite.

#### **SOC.533 Issues in Corrections**

This course examines how various institutional and community sanctions (or "corrections") have been used as a method in responding to crime. Correctional concepts, history, processes and contemporary issues in corrections are explored within the social and legal contexts of correctional facilities function. No prerequisite.

#### **SOC.540 Race, Gender, Class and Criminal Justice**

This course examines how race, gender and social class influence how people are treated by the criminal justice system as perpetrators, victims and practitioners. No prerequisite.

#### **SOC.550 Social Inequality**

This course provides an interpretive framework for examining the many issues associated with social stratification and resulting inequalities. We will focus primarily on Western models of stratification, but we will also explore the different ways this concept is both imagined and perpetuated in other, non-Western societies. The emphasis will be on socioeconomic stratification, but we will also look at other forms of stratification such as gender, race, ethnicity, etc.

#### **SOC.551 Constructing Social Problems**

This course provides an overview of the constructionist approach to social problems. This class examines how problems are "interpretively constructed" as discussed and debated by various individuals and groups. The process of making claims about problems is the central concern of this course. No prerequisite.

#### **SOC.552 Sociological Social Psychology**

This course represents an overview of sociological social psychology or symbolic interactionism. Use of classic and current readings to explore interactionist theories and research on topics, including the self, motives, alcohol, emotions, language, and social problems. No prerequisite.

**SOC.553 Urban Ethnography**

This course introduces students to a sociological perspective of everyday social settings by applying methods of systematic, qualitative observation. Throughout this course, you will gain hands-on experience by carrying out your own ethnographic research project. No prerequisite.

**SOC.554 Environmental Impact of the City**

This course examines the social, economic and environmental dimensions of sustainability in cities around the world. Also examined are policies and opportunities to address the challenges of sustainability from both developed and developing countries.

**SOC. 560 Research Methodology**

This course introduces the student to the issues of design and data collection related to different strategies of social science research. It examines the rationale, strengths, and weakness of each of the major research strategies and is designed to develop the skills of students as both initiators and consumers of research. Various methods of data collection will be covered, practiced, and evaluated in the course. The goal is to understand the purposes, contributions, and construction of the major research strategies.

**SOC.561 Death Investigation**

This course exposes the various forensic disciplines involved in a medicolegal death investigation and teaches an individual the tools and techniques necessary to perform a thorough, competent medicolegal death investigation. Proper instruction for disseminating this information is also covered. The course is designed to teach the 29 national guidelines as set forth in the National Institutes of Justice 199 publication, *Death Investigation: A Guide for the Scene Investigator*. The format of the course is strictly lecture.

**SOC.564 Social Demography**

This course covers beginning and intermediate demographic methods. This course consists of lectures, seminars, and labs. Topics to be covered include: Population Dynamics, Economic Dynamics, Social Dynamics, and Applied Demographic Methods and Policy.

**SOC.565 Introduction to GIS**

This class introduces concepts, science and theory of GIS with hands-on experiences. After successful completion of the course, students will be able to demonstrate fundamental techniques of geospatial analysis and mapping. Students may only apply credits towards their graduation requirements from one of the following courses: IAS-517, BIOL-517, or SOC-565.

**SOC.566 Intermediate GIS**

This course covers intermediate and advanced topics in GIS including remote sensing for GIS, geospatial statistics and GIS in biogeography. Prerequisites: one of the courses EAS-417, BIOL-417, or SOC-465. Students may only apply credits towards their graduation requirements from one of the following courses: EAS-418, BIOL-418, or SOC-466.

**SOC.567 Spatial Demography**

This course covers intermediate and advanced topics in Spatial Statistics. This course consists of lectures, seminars, and labs. Topics to be covered include: Spatial Autocorrelation, Spatial Regression, Geographically Weighted Regression, and Gravity Models. Pre-requisites ( IAS-517 or BIOL 517 or SOC-565) or other introductory GIS course.

**SOC.580 Survey Design and Sampling**

This course offers basic knowledge and skills of survey methods so that students will be able to apply various techniques for data collection and analysis. During the course, students will learn basic proposal development, instrument preparation, data collection and analysis, and presentation of the results, through hands-on practice. Students are expected to write publishable/presentable manuscript as a term paper.

**SOC.585 Program Evaluation and Needs Assessment**

Using examples from quantitative and qualitative research, the primary goal of this course is to familiarize students with program evaluation and research in the health field. The course will focus on different types of program evaluation, including formative research, process evaluation and outcome/impact evaluation. Needs assessment will also be covered. Students will learn how to design a program evaluation and how to analyze and report outcomes.

**SOC.589 Reading Statistics in Research**

This course provides background in statistical techniques for judging the legitimacy of an author's claims based upon statistical results. It focuses on understanding what a given technique accomplishes statistically, the types of conclusions that can be reached using a technique and how the results are reported in research articles and dissertations. No pre-requisites.

**SOC.601 Quantitative I: Applied Inferential Statistics**

This course provides computer analysis skills. It focuses on data management and data analyses using SPSS (Statistical Package for the Social Sciences) for Windows software. The students learn to: prepare data for processing, formulate hypotheses, discern the relationships of variables in the analysis stage, and interpret the output from SPSS.

**SOC.610 Regression Analysis and Non-linear Models**

This course offers advanced knowledge and skills of multiple regression analysis, logistic regression, log-linear and logit models so that students will be able to apply various techniques for data analysis. Students are encouraged to use their own data for course assignments. Students will develop a draft of a publishable/presentable manuscript as a term paper.

**SOC.620 Nonparametric Statistical Analysis**

To quote from a statistics textbook, this course is going to "mangle your means, torture your t-distribution, dangle your data, violate your variables and corrupt your correlations." In other words, what do you do when all the other statistics you learned don't work for you? In short, this course will hopefully teach you how, when and why to apply nonparametric "sadtistic statistics" to real problems.

# THEOLOGICAL STUDIES

**Jay M. Hammond, Ph.D.**

*Department Chairperson*

**Julie Hanlon Rubio, Ph.D.**

*Director of M.A. Program*

**Jay M. Hammond, Ph.D.**

*Director of Ph.D. Program*

The department offers two degrees. The MA in Theology has three areas of specialization: Constructive Theology, Religious Education, and Historical Theology. The PhD in Historical Theology has three areas of specialization: Early Christianity, Medieval Christianity, and Modern Christianity.

## Master of Arts in Theology

The M.A. in Theology brings together two, complementary poles of theological reflection: *retrieval* and *appropriation*. On the one hand, the program equips students with the methodological and conceptual tools necessary for understanding classic theological texts within their historical, cultural, and ecclesial contexts. This emphasis on *retrieval* not only allows for a greater appreciation of the rich and varied traditions out of which contemporary theological reflection emerges; it also gives students a better grasp of the context sensitive character of all human understanding. On the other



hand, the program brings classic theological texts into critical conversation with our contemporary setting. This emphasis on *appropriation* provides students opportunities and skills to think creatively and practically about the ongoing impact of theological reflection, both in the search for human meaning and the task of personal and social transformation. While each of the three tracks retains distinguishing characteristics and requirements, all three tracks gain an internal coherence through integrating these two poles.

This integration process is the chief goal of the *Theological Sources and Methods Seminar* required of all MA students. This seminar introduces students to the major sources and methods for thinking theologically at the graduate level. With a triple emphasis on historical methods, theological hermeneutics, and practical theology, the seminar provides students the opportunity to understand and to begin practicing the interrelated tasks of theology.

### Prerequisites

An undergraduate major in theology is the standard prerequisite for the MA in Theology. However, the Department may admit students who have had at least 18 hours in Theology (or Religious Studies with a strong theological component). The overall concern is that each MA student has the basic knowledge and skill set to succeed in a graduate program in theological studies. Deficiencies may be satisfied through specific, intensive, prerequisite courses offered by the Department of Theological Studies. Applicants with an undergraduate major in the humanities (with a strong liberal arts background) may also apply, although in these cases a greater number of prerequisite courses may be required in their first year.

### Required Courses:

36 hours

The MA consists of three tracks from which students may choose upon enrollment.

#### Track # 1: Constructive Theology

This track is designed to train students in the craft of *constructive theology* in a manner that is both *historically conscious* and *ethically-engaged*. With a backbone of course offerings in constructive theology (e.g., Christology, Anthropology, Ecclesiology, and God), students take accompanying courses in historical theology, theological ethics, and scripture to deepen their understanding of the historical roots and practical implications of theological reflection.

The constructive theology track consists of a 36-hour, two year program of study:

- Theological Resources and Methods (3 hours)
- Constructive Theology (6 hours)
- Theological Ethics (6 hours)
- Historical Theology ( 6 hours)
- Scripture (6 hours)
- Elective (3 hours)
- (6) MA Thesis or (6) Additional Elective hours

*MA Thesis:* The MA thesis in Constructive Theology (50-70 pages) for a total of 6 credit hours. This option is especially recommended to students who intend to apply to PhD programs.

*Languages:* Students must demonstrate proficiency in at least one foreign language (Latin, Greek, German, French, or Spanish).

#### Track # 2: Religious Education

This track closely follows the course of study detailed for the Constructive Theology track, but with the following difference: students who elect the Religious Education emphasis will take 9 hours of courses offered by the Archdiocesan Catholic Education Office.

The Religious Education track consists of a 36-hour program of study:

- Theological Resources and Methods (3 hours)
- Constructive Theology (6 hours)
- Theological Ethics (6 hours)
- Historical Theology (3 hours)
- Scripture (6 hours)
- Elective ( 3 hours)
- Religious Education (9 hours)

- o The Curriculum and Administration of Religious Education Programs (3 hours)
- o Theology of Catechetical Ministry (3 hours)
- o Models and Methods for Religious Education (3 hours)

#### Track # 3: Historical Theology

This track is designed for students who wish to emphasize the *historical* dimension of theological reflection. While taking courses in constructive and moral theology, students within this emphasis must dedicate 3 of the 9 required hours to a Special Topics or Research Problems Seminar. Students will also be encouraged to use the 3-hour elective towards historical studies.

The historical theology track consists of a 36 hour, two-year program of study:

- Theological Resources and Methods (3 hours)
- Constructive Theology ( 6 hours)
- Theological Ethics (3 hours)
- Historical Theology ( 9 hours)
- Scripture (6 hours)
- Elective (3 hours)
- MA Thesis (6 hours)

*MA Thesis:* Students will compose an MA thesis in Historical Theology (50-70 pages) for a total of 6 credit hours.

*Languages:* Students must demonstrate proficiency in two foreign languages—one ancient (Latin or Greek) and one modern (German or French).

# Doctor of Philosophy in Historical Theology

## Prerequisites

- M.A. degree in Historical Theology or the equivalent
- Nine credit hours of undergraduate and/or MA philosophy courses
- Nine credit hours of undergraduate and/or MA history courses
- Competency in at least one research language besides English (usually Greek, Latin, French, German or Italian).

Deficiencies may be satisfied through specific, intensive, prerequisite courses offered by the Department of Theological Studies.

## Required Courses: 54 hours

The program requires two years of coursework (36 hours), and a third year dedicated to dissertation related research (18 hours). The remaining two years focus on dissertation writing, which does not require credit hours. Moreover, students are expected to have a major area (12 credit-hours of doctoral seminars) and a minor area (6 credit hours of doctoral seminars; *a formal minor is not permitted*) chosen from the three possible areas of specialization: Early Christianity, Medieval Christianity, and Modern Christianity. By the end of the first year, students are required to declare their major/minor.

The thirty-six hours of coursework derive from the following options:

- THEO 601: Methods in Historical Theology (3 hours) required of all students
- Historical Theology Surveys (9 hours) required of all students
  - o THEO 602: Early Christianity
  - o THEO 603: Medieval Christianity
  - o THEO 604: Modern Christianity
- Major Seminars (12 hours) chosen according to student's declared major field
  - o THEO 611: Early Christianity
  - o THEO 612: Medieval Christianity
  - o THEO 613: Modern Christianity
- Minor Seminars (6 hours) chosen according to a student's declared minor field
  - o THEO 611: Early Christianity
  - o THEO 612: Medieval Christianity
  - o THEO 613: Modern Christianity
- Electives (6 hours) chosen from any graduate course offered (500/600 level)

The eighteen hours of related dissertation research include the following:

- Dissertation Prospectus (3 hours)
- Dissertation Field Exam (3 hours)

- Dissertation Research (12 hours)

## Additional Requirements

All PhD students are required to demonstrate competency in *three* languages before advancement to their dissertation field exam in the second year. One language must be ancient and one modern. The language choices are determined by the student's research specialty as approved by the Director of the PhD program in consultation with the chair of the student's comprehensive examination board. The language possibilities include, but are not limited to: Greek, Latin, Syriac, German, French, Spanish or Italian.

Prior to acceptance into the program, students must assure competency in at least one of the above languages. The student must demonstrate this competency during the first year of study. If competency is not demonstrated during the first year, the student will be removed from the program.

In addition to the three language requirements for advancement to PhD candidacy, other languages to conduct research for the dissertation may be required by the director of the candidate's dissertation. The dissertation is the final arbitrator of the languages required.

## Course Descriptions

### Masters Courses

### *Biblical Theology*

#### **THEO 500: Biblical Interpretation (3)**

This course seeks to introduce students to the field of biblical hermeneutics: the theory of understanding and interpreting biblical texts. The course will survey the history of hermeneutical theory, emphasizing its richness, diversity, and the sources and norms that serve as its basis (offered occasionally).

#### **THEO 502: Pentateuch (3)**

Exegesis of the text of selected portions of the pentateuchal literature; development of the textual tradition; textual and form criticism (offered occasionally).

#### **THEO 503: Historical Books (3)**

Exegesis of the text of the historical writings of the pre- and post-exilic periods; nature of history in Semitic literature; sources (offered occasionally).

#### **THEO 504: Prophets (3)**

Exegesis of the text of the prophetic writings; prophetic form and theology, pre and post-exilic prophetic theology; messianic theology (offered occasionally).

#### **THEO 505: Wisdom Literature (3)**

Exegesis of the text of selected portions of the wisdom literature of the Old Testament; nature and development (offered occasionally).

#### **THEO 506: The Psalms (3)**

Types, literary composition and outline, liturgical and theological context. Individual psalms studied as representative of each category (offered occasionally).

#### **THEO 509: Special Topics: Old Testament (3)**

Offered occasionally.

#### **THEO 510: New Testament (3)**

The external and internal history of the New Testament; literary forms, main theological concerns of each New Testament writer (offered occasionally).

#### **THEO 511: The Synoptics (3)**

In-depth study of Matthew, Mark, Luke. Theological problems involved; form and redaction criticism; role of the kerygma and the Christian community in formation of the Synoptics; theology, especially Christology (offered occasionally).

**THEO 512: Luke-Acts (3)**

Considers Luke's main theological theme and how it relates to the other themes. Certain passages will be studied in detail. Review of secondary literature (offered occasionally).

**THEO 513: Paul (3)**

The Epistles studied will vary (offered occasionally).

**THEO 514: Johannine Literature (3)**

Original setting established through structural, thematic, and periscope analysis; how Christian faith and life today are enriched by this literature (offered occasionally).

**THEO519: Special Topics: New Testament (3)**

Offered occasionally.

***Historical Theology***

**THEO 520: Methods in Historical Theology (3)**

Principles of historical criticism, methods in research and writing. Church historiography, and theological issues of faith and history. (offered every Fall semester; cross lists with THEO 601).

**THEO 521: Survey of Early Christian History, 200-600 (3)**

A broad study of the figures, movements and theological themes in the development of early Christianity from the close of the New Testament to Gregory the Great (offered every Fall semester; cross lists with THEO 602).

**THEO 522: Survey of Medieval Christian History, 600-1500 (3)**

A broad study of the figures, movements and theological themes in the historical period from late antiquity up to the 15th century (offered every Spring semester; cross lists with THEO 603).

**THEO 523: Christianity, 1500-2000 (3)**

A broad study of the figures, movements and theological themes in the development of Protestant, Orthodox and Catholic Christianity from the time of the Reformation through the Council of Trent to the present, but with Global emphasis ( offered every Spring semester; cross lists with THEO 604).

**THEO 525: Survey of the History of Religions (3)**

A broad study of the figures, movements, and theological themes of the primary religions of South Asia, East Asia, the Middle East, as well as the Abrahamic traditions (offered every other year).

**THEO 526: Comparative Theology (3)**

A study of how theological change has taken place historically in the context of inter-religious relations, and of the implications of serious interchange between and among religious traditions for the future of Christian theology (offered every other year).

**THEO 539.Special Topics: Historical Theology (3)**

Offered occasionally.

***Systematic Theology***

**THEO.540 Theological Resources and Methods (3)**

Principles of various theological methods, issues pertinent to defining theology as a field of inquiry, history of different approaches to theology and theological questions (Offered every Fall semester).

**THEO 542: God (3)**

Existence and nature of God in the Bible, in Christian tradition and contemporary theology (offered occasionally).

**THEO 544: Christology (3)**

Meaning of Jesus Christ in the Bible, in Christian tradition, and contemporary theology (offered occasionally).

**THEO545: Theology of the Human Person (3)**

This course explores the meaning of being human from a theological perspective. Themes to be examined include the relationship between nature and grace, sin, free will, human knowledge, finitude and embodiment (offered occasionally).

**THEO547: Ecclesiology (3)**

Foundation, structure, marks, mission, and offices of the Church; historical development; ecumenical questions (offered occasionally).

**THEO 550: Sacraments (3)**

Sacraments in Christian history and theology in general (offered occasionally).

**THEO.559 Special Topics: Systematic Theology (3)**

Offered occasionally.

***Moral Theology***

**THEO 560: Contemporary Moral Theology (3)**

Major contemporary systems and approaches to Moral Theology. Discussion of certain practical problems, e.g. right to life, civil rights, truthfulness, etc. (offered occasionally).

**THEO 562 Fundamental Moral Theology (3)**

Sin and guilt as both problem and mystery in relation to Christian conscience, freedom, virtue, sanctity, and sanity (offered occasionally).

**THEO 563: Social Ethics (3)**

The Scriptural basis for the social teachings of the Church, the development of this Scripture basis in the Fathers of the Church and in the theologians of later periods, social problems of the modern world in the last two centuries (offered occasionally).

**THEO 564: Family Ethics (3)**

Nature and principles of Christian sexual morality; special contemporary questions (offered occasionally).

**THEO 565: Bioethical Controversies (3)**

The basic theological stances and conflicts related to the fields of medicine and the new biology; specific areas and problems analyzed, e.g., abortion, euthanasia, genetic engineering, etc. (offered occasionally).

**THEO 568 History of Moral Theology (3)**

A survey of sources, methodologies, and issues in Roman Catholic moral theology from the apostolic church to the present day (offered occasionally).

**THEO 569: Special Topics: Moral or Pastoral Theology (3)**

Offered occasionally.

***Spirituality***

**THEO 573: Spirituality and Psychology (3)**

Implications of psychological and developmental theories, especially those that are humanistic and existential, for an integrated spirituality (offered occasionally).

**THEO.579 Special Topics: Spirituality (3)**

Offered occasionally.

***Religious Education***

**THEO 580: Theology of Catechetical Ministry (3)**

History and theology of religious education and the role of the catechist in Christian tradition; the theological understanding of religious education and the principal authoritative documents of recent times (offered every other year).

**THEO 581: Models and Methods for Religious Education (3)**

Examination of theological and educational models in religious education and their influence on catechetical material and methods; applied to all levels; texts and resources reviewed (Offered every other year).

**THEO 582: The Curriculum and Administration of Religious Education**

**Programs (3)**

Strategies for developing and maintaining religious education programs in school and parish. Essential elements of religious education curriculum; introducing children and adults to sacraments; focus on first sacraments and RCIA; liturgy and prayer in catechesis (offered every other year).

**THEO 595: Special Study for Examinations (0)****THEO 596: Essay Guidance (0-3)****THEO597: Research Topics (1-3)**

Prior permission of guiding professor and program director required.

**THEO 598: Graduate Reading Course (1-3)**

Prior permission of guiding professor and program director required.

**THEO 5CR.90: Master's Degree Study (0)*****Doctoral Courses in Historical Theology*****THEO 601: Methods in Historical Theology (3)**

Principles of historical criticism, methods in research and writing. Church historiography, and theological issues of faith and history. (Offered every Fall semester; cross lists with THEO 520.)

**THEO 602: Survey of Early Christian History, 200-600 (3)**

A broad study of the figures, movements and theological themes in the development of early Christianity from the close of the New Testament to Gregory the Great (offered every Fall semester; cross lists with THEO 521).

**THEO 603: Survey of Medieval Christian History, 600-1500 (3)**

A broad study of the figures, movements and theological themes in the historical period from late antiquity up to the 15th century (offered every Spring semester; cross lists with THEO 522).

**THEO 604: Survey of Early Modern: 1500-2000 (3)**

A broad study of the figures, movements and theological themes in the development of Protestant, Orthodox and Catholic Christianity from the time of the Reformation through the Council of Trent to the present, but with Global emphasis (offered every Spring semester; cross lists with THEO 523).

**THEO 611: Early Church Seminar (0 or 3)**

A study of specific author or school of theology in Christian antiquity. The actual content of the seminar follows the professor's own research (offered every semester).

**THEO 612: Medieval Seminar (0 or 3)**

In-depth study of particular authors, schools or texts in the medieval religious world. The actual content of the seminar follows the professor's own research (offered every semester).

**THEO 614: Modern Seminar (0 or 3)**

Study of a specific author or school of theology in modern period, which is globally understood. Hence, the various seminars will examine American, African, Asian, and European Christian history. The actual content of the seminar follows the professor's own research (offered every semester).

**THEO 621: Prospectus (3)**

The seminar will nurture an integration of faith and reason, investigate the relation between history and theology, and elaborate critically grounded theological views on: Hermeneutics, Theological Themes, Catholic Theology, Theology and Practice (offered every Fall semester).

**THEO 693: Special Topics in Historical Theology (3)**

Offered occasionally.

**THEO 695: Special Study for Examinations (0)****THEO 697: Research Topics (1-3)**

Prior permission of guiding professor and program director required.

**THEO 698: Graduate Reading Course (1-3)**

Prior permission of guiding professor and program director required.

**THEO 699: Dissertation Research (0-9)****THEO 6CR.99: Doctor of Philosophy Degree Study (0)**

## GRADUATE OFFERINGS IN College of Education and Public Service

**John Watzke, Ph.D.,**  
*Collegiate Dean*

Established in 1998, the College is the academic home for six departments of the University that share a common mission of community outreach and service. The academic departments are supplemented by centers that provide a rich environment to enhance faculty collaboration in teaching, interdisciplinary research, and outreach initiatives that affect metropolitan St. Louis communities. The College offers graduate degree programs in nine established major fields, the curricula for which are detailed below. Ten areas of specialization are available within Education. The College also offers the only Ph.D. degree program in Public Policy Analysis based at a Jesuit university.

**Effective Immediately: Following the April 3, 2012 decision by the Saint Louis University Board of Trustees, the College of Education and Public Service will no longer be accepting applicants for the following six graduate programs, which have been closed: M.A. in Urban Affairs, M.A. in Family Therapy, M.A. in Counseling, Certificate in Organizational Leadership and Development, Certificate in Geographic Information Systems, Certificate in Marriage and Family Therapy. No new students will be admitted to these programs. Students admitted for summer 2012 and subsequent terms will be given the opportunity to enroll in other programs. Existing, and actively enrolled, students will be given reasonable time to complete their degree programs.**

## COUNSELING AND FAMILY THERAPY

**Craig W. Smith, Ph.D.,**  
*Department Chairperson*

The mission of the Department of Counseling and Family Therapy is to train skilled clinicians in the professions of professional counseling and marriage and family therapy who are engaged in service to individuals, couples, families and the community. Through a scholarly and reflective process, we are involved in the development of professional clinicians who understand and recognize the importance of scientific inquiry, diversity and social justice. We respect and accept multiple perspectives, and strive to practice in a collaborative

engagement with other professionals and the community. The Marriage and Family Therapy Doctoral Program at Saint Louis University is accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE) of the American Association for Marriage and Family Therapy (AAMFT), 112 S. Alfred Street, Alexandria, VA 22314, 703.838.9808. As part of the Educational Unit of the Saint Louis University College of Education and Public Service, the School Counseling program is accredited by the Missouri Department of Elementary and Secondary Education (DESE) and the National Council for Accreditation of Teacher Education (NCATE).

The Department of Counseling and Family Therapy is unique in training students to work with individuals, couples, and families through the life cycle, and to collaborate in other social contexts in which people live, learn, and work. Doctoral and Master's degree students see clients at the Center for Counseling and Family Therapy, located near the Department offices. The Center provides mental health services to the university and St. Louis communities on a sliding-scale fee basis. The Department of Counseling and Family Therapy offers both Master's and Doctoral degree programs, as well as a Marriage and Family Therapy Certificate program.

## Master of Arts in Counseling

Program options include concentrations in School Counseling, toward fulfillment of requirements for Professional School Counselor Certification in Missouri, and Human Development Counseling, fulfilling course and practicum requirements toward Licensed Professional Counselor (LPC) status in Missouri. Both concentrations require a total of 600 hours of clinical experience with at least 280 hours of direct clinical contact.

### Prerequisites

The M.A. in Counseling program involves a minimum of 51 credit hours beyond the bachelor's degree. Prerequisites include 18 credit hours in the behavioral sciences.

### Course of Study

CFT.520 Counseling and Career Development (3);  
 CFT.522 Introduction to Counseling (3);  
 CFT.530 Counseling Theory (3);  
 CFT.532 Group Counseling Theory and Practice (3);  
 CFT.533 Assessment Methods in Counseling (3);  
 CFT.540 Practicum in Counseling (Beg) (3)  
 CFT.550 Practicum in Counseling (Adv) (3)  
 CFT.544 Internship in Counseling (6)  
 CFT.570 Advanced Growth and Development (3) or  
 EDF.530 Advanced Educational Psychology (3);  
 CFT.577 Foundations of Multicultural Counseling (3);  
 CFT.653 Ethical and Legal Issues in Counseling and Family Therapy (3);  
 CFT.655 Diagnosis and Appraisal in Counseling and Family Therapy (3);  
 CFT.666 Introduction to Couple and Family Studies (3);  
 A graduate level statistics course (3); and

A graduate level research methods course (3).

Three credit hours of electives.

Three credit hours of electives must be CFT.500 (or CFT.501 Foundations of Guidance if concentration is Elementary (or Secondary) School Counseling.

Candidates for Missouri Department of Elementary and Secondary Education (DESE) Professional School Counseling Certification must have a valid teaching certificate or take additional coursework beyond the M.A. in Counseling. Total credit hours required for degree: 51.

*A formal minor is not permitted.*

## Master of Arts in Family Therapy

The M.A. in Family Therapy program fulfills the course and clinical training requirements toward licensure in the State of Missouri as a Licensed Marital and Family Therapist (LMFT). Five-hundred hours of direct clinical contact, 250 of those being with couples and families, is required.

### Prerequisites

The M.A. in Family Therapy program involves a minimum of 51 credit hours beyond the bachelor's degree. Prerequisites include 18 credit hours in the behavioral sciences.

### Course of Study

CFT.521 Introduction to Family Therapy (3);  
 CFT.532 Group Counseling Theory and Practice (3);  
 CFT.541 Practicum in Family Therapy (Beg) (3)  
 CFT.551 Practicum in Family Therapy (Adv) (3)  
 CFT.545 Internship in Family Therapy (9)  
 CFT.570 Advanced Growth and Development (3);  
 CFT.577 Foundations of Multicultural Counseling (3);  
 CFT.650 Issues in Counseling and Family Therapy (3);  
 CFT.653 Ethical and Legal Issues in Counseling and Family Therapy (3);  
 CFT.655 Diagnosis and Appraisal in Counseling and Family Therapy (3);  
 CFT.656 Couple and Family Systems Theory I (3);  
 CFT.666 Introduction to Couple and Family Studies (3);  
 CFT.670 Couple Interaction and Therapy (3);  
 A graduate level statistics course (3); and  
 A graduate level research methods course (3).  
 Total credit hours required for degree: 51.  
*A formal minor is not permitted.*

## Master of Arts (Research)

A student may petition to transfer into the research Master's degree program with the advisor's recommendation after successful completion of 12 credit hours in the M.A. degree program. The research preparation sequence must include a graduate level general research methods course and 6 credit hours of CFT.599 Thesis Research.

Total credit hours required: 54.

## Certificate in Marriage and Family Therapy

The Certificate in Marriage and Family Therapy is an interdisciplinary clinical program for qualified clinical mental health practitioners to increase their knowledge of marriage and family therapy as well as their clinical skills conducting therapy with couples and families. Coursework is designed to meet the educational requirements for Marriage and Family Therapy licensure in Missouri. Coursework ranges from 15 to 33 hours, depending on the coursework taken at the master's level. All certificate students take two practicum courses in marriage and family therapy.

### Prerequisites

Completion of a 48-hour Master's degree in a clinical mental health field, or a post-baccalaureate in a human service field.

### Course of Study

Fifteen to 33 credit hours, dependent on coursework previously completed, including:  
 Three credit hours in theoretical foundations of MFT;  
 Twelve credit hours in the practice of MFT;  
 Six credit hours in human development/family studies;  
 Three credit hours in research;  
 Six credit hours in MFT practica; and  
 Three credit hours in MFT ethics.

### Additional Requirement

Capstone requirement: position paper and defense.

## Doctor of Philosophy

The Ph.D. in Family Therapy is based on a systemic/relational view of individuals, couples and families. Coursework focuses on theory, practice, and research in the field of marriage and family therapy. The doctoral program involves a minimum of 51 credit hours of coursework beyond the master's degree, plus written and oral preliminary examinations and original research culminating in the dissertation (12+ credit hours). The Ph.D. has a clinical component, during which students serve as therapists at the department's Center for Counseling and Family Therapy and other community sites, and complete a nine to 12 month internship. Prior to graduation students must have accrued a total of 1,000 hours of direct client contact (including hours obtained during their master's degree program). Five-hundred of those hours must be relationally focused working with couples and families.

### Prerequisites

A master's degree with at least 48 hours in marriage and family therapy (MFT) or a related mental health area with coursework equivalent to a master's degree in MFT.

### Course of Study

CFT.665 Advanced Couple and Family Therapy (3);  
 CFT.669 Supervision in Family Therapy (3);  
 CFT.670 Couple Interaction and Therapy (3);  
 CFT.671 Couple and Family Systems Theory II (3);  
 CFT.676 Family Issues in Therapy (3);

CFT.677 Cultural, Social, and Family Systems (3)  
 CFT.682 The Self in Theory and Therapy (3);  
 CFT.697 Research Topics-Counseling & Family Therapy (3).

### Additional Requirements

CFT.601 Doctoral Residency  
 Six credit hours of research courses (in addition to CFT.697)  
 Nine credit hours of Couple/Family Therapy practica  
 Three credit hours of Supervision of Counselors and Family Therapists practica  
 Three credit hours of Clinical Supervision  
 Six hours of electives

### Graduate Courses

#### CFT.500 Foundations of Guidance: Elementary (3)

Theories and practice in guidance, survey of Missouri Model Guidance Program, professional role and function of the counselor at the elementary school level. (Offered every other Summer)

#### CFT.501 Foundations of Guidance: Secondary (3)

Theories and practice in guidance, survey of Missouri Model Guidance Program, professional role and function of the counselor on the secondary school level. (Offered every other Summer)

#### CFT.520 Counseling and Career Development (3)

Theories of career development; counseling approaches for decision-making, integrating personal values, career interests and life-style planning, vocational and career information resources. (Offered every Summer)

#### CFT.521 Intro to Family Therapy (3)

Introductory course for Master's degree students in Family Therapy. The person of the therapist; helping relationship skills; responding to differences among clients, including gender, culture, social class, exceptionality and generation; professional identity issues; ethical and legal standards. (Offered every Fall)

#### CFT.522 Intro to Counseling (3)

Introductory course for Master's degree students in Counseling. The person of the counselor; helping relationship skills; responding to differences among clients, including gender, culture, social class, exceptionality and generation; professional identity issues; ethical and legal standards. (Offered every Fall semester)

#### CFT.530 Counseling Theory (3)

Theories of counseling and therapy and how techniques evolve from those theories and from the personality of the theorist. Applications to school and agency settings for dealing with both normal and exceptional needs through the life cycle. (Offered every Fall semester)

#### CFT.532 Group Counseling Theory and Practice (3)

Theories and practice in leadership, interpersonal communication, group dynamics; experiential activities in the formation, development, evaluation of a group designed to develop effective new human relations skills. (Offered every Spring semester)

#### CFT.533 Assessment Methods in Counseling (3)

Psychological tests and standardized methods of assessing interest, personality, aptitude, achievement and intelligence traits of individuals; attributes of tests; uses in school guidance, counseling, therapy, personnel work, and school psychological testing; DSM IV. The student will take, administer, score and interpret several different standardized tests. (Offered every Spring semester)

#### CFT.534 Assessing Person/Context Interactions (3)

Methods and tools of assessing systemic individual/environment interactions, related stressors and adjustment issues; student/classroom, employee/workplace and individual/family interactions emphasized; staffing strategies to promote individual and systemic growth; case studies, case notes, confidentiality; the assessment role of counselors as change agents. (Offered occasionally)

**CFT.535 Family/School Consultation (3)**

Issues related to consulting within contexts which have primary responsibility for fostering the development of children. Counseling and consulting skills for responding to both normal and exceptional needs of children in family and school settings. (Offered occasionally)

**CFT.538 Nonverbal Behavior (3)**

Cognitive and experiential inquiry into the components of nonverbal behavior which may have communicative significance in interpersonal relationships. (Offered occasionally)

**CFT.540 Practicum in Counseling: Beg (2)**

Supervised experience in individual counseling. By permission of Instructor only. (Offered every Spring semester)

**CFT.541 Practicum in Family Therapy: Beg (2)**

Supervised experience in family therapy. By permission of Instructor only. (Offered every Spring semester)

**CFT.544 Internship in Counseling**

A supervised experience in individual and group counseling within a school, institutional or agency setting. By permission of Instructor only. (Offered every semester)

**CFT.545 Internship in Family Therapy**

Supervised experience in family therapy within an institutional or agency setting. By permission of Instructor only. (Offered every semester)

**CFT.550 Practicum in Counseling: Adv (1)**

Prerequisite: CFT.540. Advanced supervised experience in individual counseling. By permission of Instructor only. (Offered every Summer semester)

**CFT.551 Practicum in Family Therapy: Adv (1)**

Prerequisite: CFT.541. Advanced supervised experience in family therapy. By permission of Instructor only. (Offered every Summer semester)

**CFT.570/EDF.570 Advanced Growth and Development (3)**

A balanced and systematic multidisciplinary look at all stages of human growth and development through the life span. In family and school contexts the perspective includes contributions from education, biology, developmental psychology, sociology, and cultural anthropology. Research, including its many discoveries and controversies, is examined at all stages. In addition, critical topics into which research is increasingly gaining insight are explored. (Offered annually)

**CFT.574 Enrichment and Prevention Programs in Family and Human Systems (3)**

Ways to conceptualize, design and deliver programs which facilitate the normal development, growth and enrichment of individuals, couples and families and the prevention of dysfunction and pathology in human systems. (Offered occasionally)

**CFT.577 Foundations of Multicultural Counseling (3)**

The impact of social, cultural and gender role expectations on counselor-client interactions in individual, group or family therapy. Characteristics of skillful counseling in such contexts. (Offered every Spring semester)

**CFT.595 Special Study for Examinations (0)****CFT.598 Graduate Reading Course (1-3)**

Prior permission of guiding professor required.

**CFT.599 Thesis Research (0-6)****CFT.650 Issues in Counseling and Family Therapy (3)**

Examination of current themes and issues relevant to the professional practice of counseling and family therapy. Topics will vary. (Offered every Summer)

**CFT.651 Individual Development and Therapy (3)**

Developmental ego psychology, self psychology, object relations and attachment theories as applied in therapy. (Offered occasionally)

**CFT.652 Process Consultation Practices (3)**

Kinds of consultative relationships, stages of consultation, identification of client status, contextual implications of the consultation process. (Offered occasionally)

**CFT.653 Ethical & Legal Issues in Counseling and Family Therapy (3)**

An intensive and case-focused investigation of standards of professional practice in counseling and family therapy; ethical and legal issues in individual, group and marriage/family therapy. (Offered every Fall semester)

**CFT.655 Diagnosis and Appraisal in Counseling and Family Therapy (3)**

Interpersonal, object relations and family systems perspectives on traditional, clinical diagnostic classifications and related assessment methods and instruments. (Offered every Summer)

**CFT.656 Couple and Family Systems Theory I**

This initial family theory course includes the theoretical basis for systems theory and an overview of the various family therapy approaches. (Offered every Fall semester)

**CFT.660 Counseling and Vocational Behavior**

Prerequisite: CFT.520. Advanced readings in counseling for career development and career decision making. (Offered occasionally)

**CFT.665 Advanced Couple and Family Therapy (3)**

Prerequisite: CFT.656. Special issues in the treatment of marital and family systems. (Offered every fall semester)

**CFT.666 Introduction to Couple and Family Studies**

Theory and research on the family life cycle, family transitions, couple relationships and healthy family development. (Offered every Summer)

**CFT.667 Group Counseling (Advanced) (3)**

Prerequisite: CFT.532. Advanced seminar on the current literature and practices of counseling in group settings. (Offered occasionally)

**CFT.669 Supervision in Family Therapy (3)**

The theory and practice of clinical supervision in marriage and family therapy. (Offered every Fall semester)

**CFT.670 Couple Interaction & Therapy (3)**

Theories and techniques of couple therapy, couples' decision-making, sexuality and conflict resolution. Specific techniques for enhancing relationships are included. (Offered every Spring semester)

**CFT.671 Couple and Family Systems Theory II (3)**

Prerequisite: CFT.656 or equivalent as approved by advisor. Advanced approaches to family therapy that integrate a variety of systemic concepts. These include integrative, empirically supported and common factors models. (Offered every Spring semester)

**CFT.672 Practicum: Beginning Couple and Family Therapy (3)**

Beginning supervised practical experience in couple and family therapy. By permission of Instructor only. (Offered every Fall semester)

**CFT.673 Practicum: Intermediate Couple and Family Therapy (3)**

Intermediate supervised practical experience in couple and family therapy. By permission of Instructor only. (Offered every Spring semester)

**CFT.674 Practicum: Advanced Couple and Family Therapy (3)**

Advanced supervised practical experience in couple and family therapy. By permission of Instructor only. (Offered every Summer)

**CFT.675 Practicum: Supv. of Counselors and Family Therapists (3)**

Prerequisite: CFT.669. Experience in conducting supervision of counselors or family therapists. By permission of Instructor only. (Offered every Spring semester)

**CFT.676 Family Issues in Therapy (3)**

Reading and discussion about the major issues currently experienced by couples and families, with a focus on implications for family therapy intervention approaches and research. (Offered every other Summer)

**CFT.677 Cultural, Social and Family Systems (3)**

Interactions of culture and gender within family, legal, political, health care, education and therapy systems. (Offered every other Summer)

**CFT.682 The Self in Theory and Therapy (3)**

Prerequisite: One semester of doctoral practicum. The system of therapy relationships including contextual and personal influences on the selection and application of theories of therapy. (Offered every Spring semester)

**CFT.684 Practicum: Teaching in Counseling (3)**

Doctoral experience assisting in the teaching of a beginning counselor education course. Permission of Instructor only. (Offered occasionally)

**CFT.687 Clinical Supervision (1)**

Supervision of clinical practice. By permission of Instructor only. (Offered every semester)

**CFT.694 Doctoral Internship (0)****CFT.695 Special Study for Examinations (0)****CFT.697 Research Topics in Counseling and Family Therapy (3)**

Study of qualitative and quantitative methods and design applicable to research in counseling and family therapy. (Offered every Fall semester)

**CFT.698 Graduate Reading Course (1-3)**

Prior permission of guiding professor.

**CFT.699 Dissertation Research (0-6)**

# EDUCATIONAL LEADERSHIP AND HIGHER EDUCATION

**William T. Rebores, Ph.D.,**

*Department Chairperson*

The Department of Educational Leadership and Higher Education offers professional and certification programs at the graduate level. The professional programs in Higher Education prepare individuals for administrative positions at the college and university level. The professional and certification programs in Educational Leadership prepare individuals for administrative positions at the building and school district level. Certification programs are offered for the following positions: Director of Special Education; Building Level Principal; Superintendent of Schools. All programs offered by the Department are accredited by the Missouri Department of Elementary and Secondary Education and the National Council for the Accreditation of Teacher Education (NCATE). Available certification programs (for elementary-, middle-, and secondary-school principal, director of special education, and superintendent of schools) currently meet State certification requirements in Missouri, Illinois, and Kansas.

**Notice: In July 2011, the Department of Educational Leadership and Higher Education will merge with the Department of Educational Studies. For more information prospective students should contact the program coordinator for their particular area of interest. Degree Programs and Concentrations:**

## *Educational Leadership*

Urban Leadership (M.A.)

Educational Administration (M.A., Ed.D., Ph.D.)

## *Higher Education*

Student Personnel Administration (M.A.)

Higher Education Administration (M.A., Ed.D., Ph.D.)

## Master of Arts

The Master of Arts degree in Educational Administration is designed for those individuals seeking a degree in leadership leading to certification as an elementary, middle, or high school principal. The Master of Arts degree in Higher Education is designed for students interested in pursuing careers in higher education administration or student personnel administration.

### Required Courses

Coursework in educational leadership, higher education, curriculum and instruction, and foundations; six semester hours in research-preparation coursework selected from those approved by the Department.

### Additional Requirements

A written preliminary degree Examination

A one-hour Oral Examination

Total required credit hours: 32.

## Specialist in Education

The Specialist in Education degree program is offered for persons interested in developing competencies necessary for certification as superintendents of schools or advanced certification as elementary, middle, or high school principals.

### Required Courses

A minimum of 30 semester hours of in-residence credit beyond the Master's Degree; and six semester hours of research-preparation (the same courses as those required for the Master of Arts degree or their equivalents.)

## Doctor of Education

The Doctor of Education degree program is designed to prepare professionals for leadership positions in school districts, colleges, and universities. The program emphasizes a practical problem-oriented curriculum which does not require a strong research emphasis.

### Prerequisites

A Master's degree in Education or a related field and six credit hours of research preparation (the same courses as those required for the Master of Arts degree or their equivalents).

### Required Courses



A minimum of 70 hours of academic work beyond the baccalaureate, including 40 credit hours in education and an internship and/or practicum. Research requirements include those required for the Master of Arts degree (six credit hours) and one advanced research course selected from those approved by the Department. A minimum of 28 credit-hours, excluding assigned prerequisites (if any), must be taken at Saint Louis University. The Ed.D. degree program encourages students to begin their projects early in their program-tenure. Three Project Guidance credits will be included in the total hour's requirement. Advancement to Candidate status and completion of the project will follow in program-order passing of the written preliminary degree examination. The oral degree examination becomes the capstone requirement, including in part a presentation and defense of the student's contribution to the (team) project.

## Doctor of Philosophy

The Doctor of Philosophy degree program is designed for students seeking a strong emphasis on research focused on the relationship of theory to practice in educational leadership.

### Prerequisites

A Master's degree in Education or a related field, and six credit hours of research preparation (the same courses as those required for the Master of Arts degree or their equivalents).

### Required Courses

A minimum of sixty (60) semester hours of post baccalaureate, pre-research, academic work, including minimally forty (40) credit hours in graduate education and nine semester hours of advanced research-preparation beyond the six credit hours required for the Master's degree; demonstrated competence in one or two foreign languages (neither the native tongue of the student) may substitute for one or two of the three advanced research courses.

## Certificate Programs

Certificate Programs are designed for the post baccalaureate student seeking additional academic preparation in the areas of Higher Education Administration, Student Personnel Administration, and Community College Administration. All Certificate Programs require completion of 18 credit hours. Courses in Higher Education and Community College Administration are delivered through traditional and on-line instruction. The Certificate in Student Personnel Administration is offered exclusively on-line.

## COURSE DESCRIPTIONS

### *Educational Administration and Higher Education*

#### Graduate Courses

#### **EDL.510 Foundations of Educational Administration (2-3)**

Required as a prerequisite to all other educational administration courses. An introduction to the field of educational administration for the Master's level student and those students new to educational administration. Topics include school organization, interpersonal communications, decision making, change and innovation.

#### **EDL.515 Special Dimensions of Educational Administration (3)**

Roles of the principal and the institution will be explored with special emphasis given to unique aspects of parochial schools.

#### **EDL.520 School-Community Relations (2-3)**

A study of the nature, scope, principles and practices of public relations including organization and administration.

#### **EDL.525 History of Higher Education (2-3)**

Historical trends and theoretical foundations that gave rise to modern American colleges and universities.

#### **EDL.530 School Law (2-3)**

An introduction to legal sources and documents related to schools. Selected case studies will be used to examine legal issues related to school students, teachers, and administrators.

#### **EDL.535 Student Development Theory (3)**

Theoretical concepts and empirical findings will be examined that help to describe the college student in relation to changing demographics, culture, and development. Throughout the course, attention will be paid to the impact of the campus environment on diverse student populations and a variety of student groups.

#### **EDL.540 Law and Higher Education (3)**

Exploration and analysis of selected problems involving legal restrictions and/or protections for colleges and universities.

#### **EDL.545 Managing the Building Level Curriculum (3)**

This course is designed to strengthen students' knowledge and skills as instructional leaders by identifying and researching current and emerging curricular issues. Students will learn to coordinate and synthesize curriculum development utilizing appropriate instruction designs, manage delivery and resources as they relate to curriculum, and utilize assessment results. Students will conduct and report results of a building level audit of curriculum supports and implementation.

#### **EDL.547 Legal and Ethical Issues In Student Personnel Administration (3)**

This course acquaints students with the legal and ethical issues affecting student personnel administrators. A lecture, discussion and problem solving format will be utilized.

#### **EDL.550 Seminar: Legal Issues in Higher Education (2-3)**

In-depth analysis of selected topics involving the law of higher education.

#### **EDL.560 Student Personnel Administration (3)**

Survey of patterns, problems, and trends in student personnel.

#### **EDL.563 The Principalship I (3)**

An overview of the school principalship with an emphasis on leadership. This course will look at solving critical school improvement problems, change, innovation and interpersonal communication.

#### **EDL.564 The Student in Higher Education (3)**

Exploration and analysis of attitudes and characteristics of the college student population in context of the institutional climate.

#### **EDL.565 Intervention Skills for Student Personnel Administration (3)**

This course focuses on developing skills necessary for facilitating career and educational decision-making, conflict management, and promoting the development of interpersonal relationships and healthy lifestyle habits.

#### **EDL.566 The Principalship II (3)**

An overview of the school principalship with an emphasis on the management skills that are required to manage the operations of the school. Major issues covered will be building the new principals entry plan, facilities operations, student discipline, scheduling, budgeting processes, handbooks, safety and

security, support personnel, extra-curricular and school activity programs, central office relationships, recruiting, hiring and evaluating staff, and services for special needs students. While taking Principalship I is highly recommended as a pre-requisite it is not required.

**EDL.570 Internship: Higher Education Administration (1-3)**

Supervised experience in appropriate administrative offices. Permission of Instructor required.

**EDL.571 Internship: Student Personnel Administration in Higher Education (1-3)**

Supervised experience in appropriate student personnel administrative offices. Permission of Instructor required.

**EDL.572 Internship: College Teaching (1-3)**

Supervised experience in teaching a college course. Permission of instructor required.

**EDL.573 Professional Staff Development and Evaluation (2-3)**

This course considers the importance and difficulty of motivating educators to seek lifelong personal improvement as reflective professional practitioners. Individual and community professional learning settings will be studied. Current systems of staff evaluation will also be analyzed and specific evaluative techniques and methods of practice, policy and research will be covered.

**EDL.575 Current Issues in Higher Education (3)**

Survey of recent significant developments, trends, and analysis of differing points of view concerning policies and practices of American colleges and universities.

**EDL.583 Internship: Building Principal (1-6)**

Students work under the direction of a successful practicing administrator and thereby gain on-the-job experience in administration and supervision. (Offered every semester)

**EDL.584 Internship: Educational Administration-Superintendency, General Administration (3-6)**

Candidates for the doctorate and specialist degrees in school administration are required to intern with a practicing school administrator for one semester. Advance permission required. Work includes all administrative areas encompassed in the responsibility of the school superintendent.

**EDL.593 Special Topics (2-3)**

**EDL.595 Special Studies for Exams (0)**

**EDL.598 Graduate Reading Course (1-3)**

Prior permission of guiding professor required.

**EDL.5CR Master's Degree Study (0)**

**EDL.600 Professional Writing in Educational Leadership (3)**

Provides the doctoral student with an introduction to the principles and practices of professional writing. Semester projects include writing professional journal articles, developing a book prospectus, and developing a proposal to present a paper at a professional conference.

**EDL.601 Doctoral Residency (0)**

**EDL.602 Case Studies: Organization and Administration of Higher Education (3)**

Exploration and analysis of selected problems in organization and administration of American colleges and universities.

**EDL.605 Disability in Higher Education and Society (3)**

This theory-to-practice course provides graduate students with a Multidimensional understanding of disability, particularly as it intersects with higher education and student development. Focus will be on the social construct of disability and creating an inclusive educational environment.

**EDL.606 Research Design and Analysis (3)**

Students will use the SPSS software program to explore quantitative research designs which are appropriate in educational leadership and higher education environments. This will include experimental, quasi-experimental and archival study designs.

**EDL.607 Evidence Based Decision Making in Education (3)**

This course will introduce students to the basics of educational research. It will provide an overview of basic statistical techniques which are used in educational research: the fundamentals of qualitative and quantitative educational research methodologies; designing educational research proposals; and how to read and evaluate published articles which report educational research.

**EDL.608 Program Evaluation (3)**

This courses focuses on the knowledge and skills associate with: identifying the target of evaluation, developing evaluation questions, developing a data collection plan; analyzing and interpreting the data for use in program improvement, reporting the finding to various audiences and stakeholders, creating and implementing a management plan, and designing a metaevaluation to assess the quality of the evaluation process.

**EDL.609 Qualitative Research for Educational Leaders (3)**

This course focuses on the application of qualitative research methodology in the context of Leadership. Throughout this course, students will apply the concepts in practical experiences.

**EDL.610 Theory of Administration (3)**

An introduction to the theory, research, and practice of educational administration designed for advanced degree student. Topics will include bureaucracy, authority, motivation, job satisfaction, organizational climate, leadership, and communication.

**EDL.611 School District Administration (3)**

Organization and operation of city and suburban public school systems; school-community relations and school politics; basic principles, concepts issues; federal, state and local relations in education; reality in school administration.

**EDL.614 The Politics of Educational Leadership (2-3)**

An overview of the politics of education with attention to local-state-federal relationships, teacher-administrator-school board relationships, policy development and analysis in schools, rural/suburban/urban school systems and problems, and the place of the school in society.

**EDL.615 Organization and Administration of Higher Education (3)**

Designed to improve the student's ability to conceptualize the total field of administration through studies of administrative theory, behavior, processes, organization, and current research.

**EDL.620 Ethics of Educational Leadership (3)**

Course centers on identifying, analyzing, and developing effective methods of confronting ethical issues in educational leadership. Case studies will be utilized to emphasize the interplay between theory and practice.

**EDL.625 Seminar: School Administration-Public and Non-Public School Relationships (2)**

A study of the interrelationships existing between public and non-public schools and the implications of such relationships for school administration. (Offered occasionally.)

**EDL.630 Advanced School Law (2-3)**

Prerequisite: EDA.530. Detailed examination of Missouri school laws, legal research, and analysis of selected cases.

**EDL.639 Seminar: Gateway Leadership Institute (2-3)**

This seminar is designed for the advanced degree student to connect them with some of the best national and international thinkers, writers and researchers in educational leadership.

**EDL.640 Seminar: Human Resources Administration (2-3)**

An introduction to the basic principles and practices of public school human resource administration. Topics will include motivation, leadership, recruitment, selection, induction, orientation, staff development, salary administration, collective bargaining, evaluation, and supervision.

**EDL.641 Professional Negotiations (2-3)**

An introduction to the collective bargaining process in education and throughout the public sector. Topics will include public/private sector

differences, the history and development of unions, public sector management, and the legal environment.

**EDL.645 Managing the District Curriculum (3)**

The course examines the concepts of curriculum leadership and applies these concepts to the process of curriculum management and improvement. It is designed to strengthen students' knowledge and skills as district instructional leaders by investigating current and emerging curricular issues. Students will audit a district's curriculum as it relates to written curriculum, implementation, practices, policies, personnel, finance, and facilities. This systematic review will provide a district wide curriculum understanding. The course requires active, thoughtful, and analytical thinking on the part of the student in order to synthesize and integrate the material into a working knowledge base.

**EDL.647 Planning and Maintaining School Facilities (2-3)**

Problems concerning predictions of enrollment; projection of educational programs; educational specifications of buildings; site location, size acquisition; architectural and construction contracts; lay and professional staff committees; bonding, staffing and equipping buildings.

**EDL.648 Advanced School Finance and Facilities (3)**

Prerequisites: EDL.647 and EDL.650 or their equivalents. An advanced course in the principles of school finance and school facility management. Emphasis will be placed on budget development, the design and construction of physical facilities, bond issues, lease-purchase agreements, and cost control. Foci on problems and issues of taxation and local, state, and federal funding.

**EDL.650 School Finance (2-3)**

Principles of taxation, developing school finance formulas, and role of federal, state, and local governments in financing education.

**EDL.658 Financial Administration in Higher Education (3)**

General introduction to the multiple aspects of financial administration in higher education including administrative organization budgeting and financial reporting, fund accounting, purchasing, management of endowment funds, loan funds.

**EDL.659 Administration of Media (2-3)**

A study of the design and implementation of media programs in schools and school systems. Attention to facilities design and the selection of materials and personnel.

**EDL.660 Higher Education Curriculum (3)**

Survey of practices and problems in the development of curricula in American colleges and universities.

**EDL.665 Technology in Educational Administration (2-3)**

Course is designed to provide the school administrator with an understanding of the role of technology in a school district. Emphasis will be placed on the planning, design, selection, and use of technology by instructional and administrative personnel.

**EDL.669 School Business Administration (2-3)**

Role of the business manager; fiscal planning models; needs assessment; budget planning and administration; accounting; auditing; personnel functions of the business office; property management.

**EDL.670 College Teaching (3)**

Critical analysis of practices, expectations, strategies, and responsibilities of the college teacher based on an analysis of the teaching-learning situation.

**EDL.677 Seminar: Academic Administration (1-3)**

In-depth study of several selected problems in the area of academic administration of colleges and universities.

**EDL.693 Special Topics (1-3)**

**EDL.695 Special Study for Exams (0)**

**EDL.696 Project Guidance (0)**

**EDL.697 Research Topics in Educational Leadership (3)**

Discussion of theories of research and the process of hypothesis development. Students draft research proposals for their Ph.D. dissertations or Ed.D. projects as the main component of the class."

**EDL.698 Graduate Reading Course (1-3)**

Prior permission of guiding professor required.

**EDL.699 Dissertation Research (0-9)**

**EDL.6CR Doctor of Education Degree Study (0)**

## EDUCATIONAL STUDIES

**Michael P. Grady, Ph.D.**

*Department Chairperson*

Graduate work in the Department of Educational Studies is designed for those individuals interested in pursuing advanced degrees in the specialties of Curriculum and Instruction, Educational Foundations, or Special Education. All programs must be planned with a graduate advisor.

**Notice: The Department of Educational Leadership and Higher Education has merged with the Department of Educational Studies. For more information prospective students should contact the program coordinator for their particular area of interest.**

## Master of Arts

**Prerequisites**

Eighteen semester-hours of advanced undergraduate coursework in education or related areas approved by the Department.

**Required Courses (All Specialties)**

At least six semester-hours of research-preparation coursework (including EDR 510 Introduction to Inferential Statistics and EDR.540: Qualitative Research Methods or its equivalent.

**Additional Requirements (All Specialties)**

No more than six semester-hours outside the College of Education and Public Service. A theme paper as partial basis for the final oral degree examination.

Total semester hours: 32.

## *Curriculum and Instruction Concentration*

Students accepted into this specialty focus, generally, in Curriculum and Instruction and may select an area of emphasis outside the Department of Educational Studies.

**Required Courses**

Six semester hours from among the following courses:

EDI.631, 632: The Supervisory Process;

EDI.641, 642, 643, 644: School Curriculum;

EDI.645: Curriculum Development;  
 EDI.646: Curriculum Theory;  
 Three credit-hours in educational psychology; and  
 Three credit-hours in educational philosophy or history of education.

## *Educational Foundations*

### *Concentration*

#### **Required Courses**

A minimum of three semester-hours each from educational psychology, history of education, and philosophy of education, and an additional three credit-hours in one of these areas.

### *Special Education Concentration*

The Master of Arts Degree in Special Education requires an emphasis in one of the following areas: Early Childhood Special Education; Behavior Disorders; Learning Disabilities; or Intellectual Disabilities.

#### **Required Courses**

EDS.460: Medical Implications in Special Education or  
 EDS.553: Fundamentals of Neurology;  
 EDS.560: Seminar in Special Education; and  
 EDS.561, 562, 563, or 564.

#### **Additional Requirements**

Dependent upon the area of emphasis. The department offers a masters degree program in Curriculum and Instruction and Special Education in Cyprus. Enrollment is limited to qualified students who are residents of Cyprus.

## **Master of Arts in Teaching (MAT)**

The MAT is designed to offer classroom teachers three broad areas of development: knowledge in subject-matter areas; current educational developments; and the processes of teaching and learning. The course of study is for classroom teachers interested in professional growth.

#### **Prerequisites**

Eighteen semester-hours of advanced undergraduate coursework in education or related areas approved by the Department.

#### **Required Courses**

A coursework program, including not more than six credit-hours from outside the College of Education and Public Service, planned with an advisor.

#### **Additional Requirements**

A theme paper as partial basis for the oral degree examination.  
 Total semester hours: 32.

## **Doctor of Education**

This degree program is intended to prepare professionals for leadership positions in educational institutions through a practical, problem-oriented program shaped largely by career intentions that do not call for a strong research emphasis. Students may choose an area of concentration in either Curriculum and Instruction or Educational Foundations.

#### **Prerequisites**

A Master's degree in Education or a related field and Research requirements for the M.A. degree in the Department of Educational Studies.

#### **Required Courses**

EDI.625: Practicum in Curriculum and Instruction, six semester-hours of advanced Curriculum and Instruction courses, and three hours of advanced research for a concentration in Curriculum and Instruction, or Nine semester-hours of advanced education-foundations courses and three hours of advanced research for a concentration in Foundations.

#### **Additional Requirements**

Two successive semesters of Doctoral Residency (registration in a total of three credit-hours) arranged with an advisor on a contract basis to extend personal and professional development. Four semester-hours of Project Guidance. Total semester-hours before the project phase: At least 38 in advanced education academic work beyond the master's degree with minimally 32 credits, excluding assigned prerequisites (if any), taken at Saint Louis University.

## **Doctor of Philosophy**

The Doctor of Philosophy (Ph.D.) program in the Department of Educational Studies emphasizes the interplay of theory and practice in education as well as a strong emphasis on research. Graduate students may choose an area of concentration in either Curriculum and Instruction or Educational Foundations.

#### **Prerequisites**

A master's degree in Education or a related field; and Research requirements for the M.A. degree in the Department of Educational Studies

#### **Required Courses**

Three advanced research courses approved by the Department. Demonstrated competency in a foreign language (not the native tongue of the student) may substitute for one of the required advanced research courses. Nine semester-hours of advanced curriculum-and-instruction courses for a concentration in Curriculum and Instruction, or Nine semester-hours of advanced foundations courses for a concentration in Foundations.

#### **Additional Requirements**

Two successive semesters of Doctoral Residency (registration in a total of three credit-hours) arranged with an advisor on a contract basis to extend personal and professional development. Total semester-hours before the research phase:

at least 30 in advanced education academic work beyond the master's degree.

## *Educational Foundations*

### Upper-Division Courses

**EDF.423 Psychology of Teaching and Learning (3)**

**EDF.470 Human Growth and Development (3)**

**EDF.471 Early Childhood Growth and Development (3)**

### Graduate Courses

**EDF.500 Theory of Education (2)**

An exploration of the nature of education as an academic discipline. (Offered annually.)

**EDF.520 The Learning Process (2)**

Study of the relationship of learning theory to classroom practice. (Offered occasionally.)

**EDF.521 Individual Differences in Ability (2)**

Origin and extent of individual differences with their implication in improvement of instruction. (Offered occasionally.)

**EDF.523 Motivation in Learning (2)**

Application of theories of motivation to classroom practice. (Offered occasionally.)

**EDF.527 Personality Development and Adjustment (3)**

Practices which appear to be detrimental to the individual's social and emotional growth. Characteristics of mental health and factors that facilitate growth and development. Personality development and its influence on the behavior of student and teacher, or counselor. (Offered occasionally.)

**EDF.530 Advanced Educational Psychology (3)**

Prerequisites: EDF.423, PSY.101, or equivalent course. An in-depth investigation of the principles of psychology as they relate to education. Learning theory and learning process, growth and development, mental hygiene, group process, and measurement and evaluation theory and analysis will be examined, along with related research. (Offered every other semester.)

**EDF.560 Foundations of Urban Education (3)**

A survey of the social and cultural factors involved in the educational opportunities provided in large urban areas. Special attention to the issues and problems that arise. (Offered occasionally.)

**EDF.561 Foundations of Catholic Education (2-3)**

Church documents will be used to review the philosophical, historical and educational perspectives of the Catholic position in schools. (Offered occasionally.)

**EDF.570/CFT.570 Advanced Growth and Development (3)**

Prerequisites: EDF.470, PSY.101, or equivalent course. A balanced and systematic multidisciplinary look at all stages of human growth and development through the life span. In family and school contexts the perspective includes contributions from education, biology, developmental psychology, sociology, and cultural anthropology. Research, including its many discoveries and controversies, is examined at all stages. In addition, critical topics into which research is increasingly gaining insight are explored. (Offered annually.)

**EDF.595 Special Study for Exams (0)**

**EDF.598 Graduate Reading Course (1-3)**

Prior permission of guiding professor.

**EDF.605 Multicultural Issues for Public Service Settings: Theory and Practice (3)**

Examination of the theory and practice of multiculturalism in public-service settings. Discussion of educational, social, legal, and ethical issues in multiculturalism. The impact of cultural membership on personal and professional functioning. Develops cultural competence in professionals who work with culturally diverse populations. (Offered twice each year.)

**EDF.610 Studies in Educational Philosophy (3)**

Introduction to some of the major educational thinkers in the English speaking world during the twentieth century. Readings will include works of Dewey, Whitehead, Adler and Bloom. (Offered annually.)

**EDF.611 Seminar: Philosophy of Education (3)**

An investigation of the educational significance of philosophic systems and basic philosophic concepts. (Offered occasionally.)

**EDF.620 Reading in Educational Classics (3)**

A study of selected writings now considered classics in the field of education. (Offered occasionally.)

**EDF.630 Studies: Catholic Education (3)**

An intensive study of selected problems and issues related to Catholic educational programs. (Offered occasionally.)

**EDF.631 Seminar: Catholic Education (3)**

An investigation of selected educational topics related to Catholic educational programs. Permission of Instructor only.

**EDF.640 History of European Education Through the Sixteenth Century (3)**

Lectures and discussions about the educational ideas and events of Europe through the Sixteenth Century as related to the times in which they occurred. (Offered occasionally.)

**EDF.641 History of European Education Since the Sixteenth Century (3)**

Lectures and discussions about the educational ideas and events of Europe since the Sixteenth Century as related to the times in which they occurred. (Offered occasionally.)

**EDF.642 Seminar: History of European Education (3)**

An investigation of selected European educational developments as related to the history of the period. Permission of Instructor only. (Offered every other year.)

**EDF.645 History of American Education to 1865 (3)**

Lecture and discussion about educational ideas and events in the American colonies, the United States and its territories as they relate to the history of the period. (Offered occasionally.)

**EDF.646 History of American Education Since 1865 (3)**

Lecture and discussion about the educational ideas and events in the United States since 1865 as they relate to the history of the period. (Offered annually.)

**EDF.650 Seminar: Education Psychology (3)**

Special topics chosen by the Instructor. (Offered occasionally.)

**EDF.660 Education in American Culture (3)**

A critical study of the many problems and issues in American education from various frames of reference. (Offered occasionally.)

**EDF.665 Seminar: History of American Education (3)**

An investigation of selected educational developments as related to the history of the period. (Offered annually.)

**EDF.685 Seminar: Comparative Education (3)**

Investigation of relationships between education and society or education of different societies. (Offered occasionally.)

**EDF.687 Seminar: Current Educational Problems (3)**

Study and critical comment on significant research recently published. Selection of problems from sources such as educational journals, superintendents' reports, yearbooks. (Offered occasionally.)

**EDF.695 Special Study for Exams (0)**

**EDF.696 Project Guidance (0-4)**

**EDF.697 Research Topics (1-3)**

**EDF.698 Graduate Reading Course (1-3)**  
Prior permission of guiding professor.

**EDF.699 Dissertation Research (0-6)**

## *Curriculum and Instruction*

### Upper-Division Courses

**EDI.421 Instructional Technology (2)**

**EDI.425 Elementary School Curriculum and Instruction (3)**

**EDI.426 Middle School Curriculum and Instruction (3)**

**EDI.427 Secondary School Curriculum and Instruction (3)**

**EDI.429 Methods in Remedial Mathematics (3)**

**EDI.430 Methods in Remedial Reading (3)**

**EDI.433 Methods in Advanced Reading (3)**

**EDI.442 Assessing Classroom Performance (3)**

**EDI.444 Assessment in Early Childhood (3-4)**

**EDI.445 Perceptual Motor Development (2)**

**EDI.448 Integrated Early Childhood Curriculum I (3)**

**EDI.449 Integrated Early Childhood Curriculum II (3)**

**EDI.451 Counseling in Early Childhood (3)**

**EDI.452 Principles of Early Childhood Education (3)**

**EDI.454 Practicum: Early Childhood Education (5)**

**EDI.455 Practicum: Elementary Education (4)**

**EDI.456 Practicum: Middle School (4)**

**EDI.457 Practicum: Secondary Education (4)**

**EDI.461 Health for Education Majors (2)**

**EDI.462 Cultural Diversity in the Classroom (3)**

**EDI.472 Home, School, Community Resources in Early Childhood Education (3)**

**EDI.476 Middle School Philosophy, Organization, and Management (2)**

**EDI.479 Seminar: Early Childhood (3)**

**EDI.480 Educational Institute (2)**

### Graduate Courses

**EDI.524 Seminar: Innovations in Elementary Mathematics Methods (3)**  
A seminar in mathematics education including the following topics: New techniques of teaching elementary mathematics, scope and sequence, current research on elementary mathematics content and methodology, supervising elementary teachers, the use of appropriate manipulatives in elementary mathematics and a focus on NCTM's agenda for action. Meets certification requirements for middle school principals. (Offered occasionally.)

### **EDI.539 Psychology of Reading (3)**

Concepts of the nature of the reading process with understanding of the theoretical bases. Pathology and psychology for cognition, lateralization, motivation, thinking, personality, home background, school environment with implications for supervisors, reading specialists, teachers and administrators. Meets Missouri Certification requirements for middle school principals. (Offered occasionally.)

### **EDI.543 Basic Human Anatomy for Teachers (3)**

Workshop designed as a hands-on examination of basic human anatomy for junior-high and high-school teachers. A combination of demonstrations, lectures by physicians, and laboratory experiences. Review of the anatomy and functions of the central nervous, senses, reproductive, cardiovascular, respiratory, gastrointestinal, and musculoskeletal systems. (Offered every Summer Sessions.)

### **EDI.544 Human Physiology for Teachers (2)**

A workshop, directed to secondary-school science teachers, intended as a content-based overview of the basic human physiology through exploration of the various body systems and physiological functions. Students are exposed to methods of teaching human physiology. Hands-on laboratory sessions are included. (Offered every Summer.)

### **EDI.560 Models of Teaching (3)**

Students examine current theories of teaching, practical models for classroom behavior and interaction patterns designed to enhance learning. The wide range of options the teacher may adopt and adapt to his/her unique situation is emphasized. (Offered occasionally.)

### **EDI.562 The Changing Roles of the Classroom Teacher (3)**

An exploration of the role demands upon the teacher in a variety of organizational schemes; examination of related research; student-initiated research in local settings. (Offered occasionally.)

### **EDI.570 Math for the Exceptional Child (3)**

Procedures and techniques for diagnosing children's strengths and weaknesses and prescribing appropriate material will be examined and studied. Teachers will also have the opportunity to examine selected formal and informal tests and construct math materials appropriate for their students. (Offered occasionally.)

### **EDI.583 Techniques of Teaching Reading in the Content Area (3)**

Specialized reading techniques for special subject matter areas. Developing higher level thinking skills of evaluation and judgment for mature readers for middle, junior and senior high school levels. Special attention to strategies for improving adult reading. Meets certification requirements for middle school principals. (Offered occasionally.)

### **EDI.595 Special Study for Exams (0)**

### **EDI.598 Graduate Reading Course (1-3)**

Prior permission of guiding professor required.

### **EDI.604 Seminar: Children's Literature (3)**

A comparative review of the rationales of the various approaches to teaching literature to children; review of the most current materials and instructional strategies. (Offered occasionally.)

### **EDI.623 Seminar in Instruction (3)**

An exploration of a particular area as designated in the current semester schedule of classes. (Offered occasionally.)

### **EDI.625 Practicum: Curriculum and Instruction (3)**

Open only to doctoral students. A series of planned and supervised field experiences in instructional leadership. (Prior permission of guiding professor.)

### **EDI.631 The Supervisory Process in the Elementary School (3)**

An overview of the research and current practices/models of school supervision and instructional management at the elementary school level. (Offered annually.)

### **EDI.632 The Supervisory Process in the Secondary School (3)**

An overview of the research and current practices/models of school supervision and instructional management at the secondary school level. (Offered annually.)

**EDI.641 The Elementary School Curriculum (3)**

A survey of current curriculum patterns, problems and proposals. Students work with both traditional and innovative programs, exploring the rationale and research in support of selected curriculum segments. (Offered annually.)

**EDI.642 The Secondary School Curriculum (3)**

A survey of current curriculum patterns, problems and proposals. Students work with both traditional and innovative programs, exploring the rationale and research in support of selected curriculum segments. (Offered annually.)

**EDI.643 Middle School Curriculum and Instruction (3)**

Theories and practice relating to design and evaluation of curriculum will be presented with special attention to curriculum development in a Catholic school. (Offered annually.)

**EDI.644 Curriculum Development in Parochial Schools (3)**

A survey of current middle-school research, philosophy, internal and external influences, and instructional practices. Students work with both traditional and innovative programs with the purpose of exploring the rationale and research in support of selected curriculum and instruction. (Offered occasionally.)

**EDI.645 Curriculum Development (3)**

Practice in using the processes of curriculum development through examination of existing programs, developing new segments of curriculum, making curriculum guide revisions or structuring the process of revision. (Offered occasionally.)

**EDI.646 Curriculum Theory (3)**

A seminar exploring existing approaches to curriculum theory, its historical development and current issues. (Offered annually.)

**EDI.648 Seminar in Curriculum (3)**

An exploration of a particular area of curriculum as designated in the current semester Schedule of Classes. (Offered occasionally.)

**EDI.650 Seminar: Religious Education (Advanced) (3)**

An advanced seminar for those with adequate work in philosophical and psychological foundations dealing with curricular or administrative aspects of program leadership. Specific topics of concern will vary from semester to semester. (Offered occasionally.)

**EDI.695 Special Study for Exams (0)**

**EDI.696 Project Guidance (0-4)**

**EDI.697 Research Topics (1-3)**

**EDI.698 Graduate Reading Course (1-3)**

Prior permission of guiding professor required.

**EDI.699 Dissertation Research (0-6)**

## *Special Studies, Readings, and Research*

### **Graduate Courses**

**EDR.510 Intro to Inferential Statistics**

**EDR.496 Action Research for Teachers (1)**

**EDR.520 Test Construction Techniques (3)**

Prerequisites: RMET.410 or EDR.600. A detailed presentation of test construction techniques and test-evaluation procedures. Includes item construction, item difficulty and discrimination analysis, test planning and test validation. (Offered occasionally.)

**EDR.540 Qualitative Research in Education (3)**

Students will learn the qualitative research paradigm, data collection and analysis techniques and report writing. (Offered every Fall and Spring semester.)

**EDR.550 Evaluation of Educational Programs (3)**

Prerequisite: EDR.540 or the equivalent. Course introduces students to program evaluation techniques and their application to schools. Builds on a basic understanding of research and evaluation processes to focus on alternative approaches to program evaluation and practical guidelines. Students will be required to conduct mini-evaluations; their involvement in these evaluations and the course readings will provide the background for seminar discussions. (Offered every Fall semester.)

**EDR.595 Special Study for Examinations (0)**

**EDR.598 Graduate Reading Course (1-3)**

Prior permission of guiding professor required.

**EDR.599 Thesis Research (0-6)**

**EDR.5CR.90 Master's Degree Study (0)**

**EDR.5CR.95 Specialist Degree Study (0)**

**EDR.600 Methods in Educational Research (3)**

General theory of research; some emphasis on educational applications and quantitative approaches. (Offered annually.)

**EDR.601 Doctoral Residency (0-3)**

(Prior permission of guiding professor.)

**EDR.665 Seminar: Reading Research (3)**

Research techniques and findings are extensively reviewed. (Offered occasionally.)

**EDR.671 Seminar: Current Research in Educational Psychology (3)**

A detailed review of research in the field of educational psychology. (Offered occasionally.)

**EDR.695 Special Study for Examinations (0)**

**EDR.696 Project Guidance (0)**

**EDR.697 Research Topics (1-3)**

**EDR.698 Graduate Reading Course (1-3)**

Prior permission of guiding professor required.

**EDR.699 Dissertation Research (0-6)**

**EDR.6CR.97 Doctor of Education Degree Study (0)**

**EDR.6CR.99 Doctor of Philosophy Degree Study (0)**

## *Special Education*

### **Upper-Division Courses**

**EDS.401 Law and the Handicapped (1)**

**EDS.424 Behavior Management: EC, EL, or SpEd. (2)**

**EDS.425 Behavior Management: Mid, Sec, or SpEd. (2)**

**EDS.431 Education and Psychology of the Exceptional Individual (3)**

**EDS.438 Supervised Practicum in Early Childhood Special Education: Practice Teaching (6-10)**

**EDS.439 Institute in Special Education (1-3)**

**EDS.440 Speech and Language Development of the Exceptional Child (2-4)****EDS.441 Diagnostic and Prescriptive Procedures (3)****EDS.442 Perception: Theories and Techniques (2)****EDS.446 Advanced Diagnostic and Prescriptive Procedures (2)****EDS.447 Teaching Methods for Inclusive Classrooms: EC and E1 (3)****EDS.448 Teaching Methods for Inclusive Classrooms: Mid and Sec (3)****EDS.451 Counseling in Special Education (2)****EDS.453 Curriculum, Methods, and Materials in Early Childhood****Special Education – Advanced (3)****EDS.456 Special Education Process (2)****EDS.460 Medical Implications in Special Education (3)****EDS.464 Seminar in Early Childhood Special Education (3)****EDS.465 Education of the Gifted (3)****EDS.470 Career Development for the Exceptional Child (2)****Graduate Courses****EDS.526 Practicum in Special Education (1-3)**

Graduate students synthesize the educational experiences obtained at the University through an extended, in-depth field experience under daily supervision. (Offered annually.)

**EDS.530 Teaching the Gifted (3)**

A review of the research, literature, materials, methods, and philosophies underlying education of gifted children and youth. (Offered occasionally.)

**EDS.531 Advanced Studies in Psychology and Education of the Exceptional Individual (3)**

Course focuses on the field of disability studies. Content includes psychological, medical, and sociological aspects of disabilities as related to cognitive, affective, and psychomotor development of the exceptional individual. Alternative instructional strategies/teaching methods are included. Special education resources and family issues are introduced. Research to practice is emphasized. (Offered every semester.)

**EDS.545 Advanced Counseling in Special Education (3)**

Approach to guidance for the exceptional individual in school and in the community. Exploration of various theories, methods and practices which maximize the potential of the exceptional person. (Offered occasionally.)

**EDS.553 Fundamentals of Neurology (3)**

An examination of neurological structures and theoretical explanations fundamental to behavior. (Offered annually.)

**EDS.554 Individual Intelligence Testing (3)**

Covers theoretical and applied aspects of intellectual assessment of children and adolescents and provides supervision in the administration, scoring, and interpretation of individual intelligence tests (Stanford-Binet, Wechsler). Course fulfills Missouri certification requirements for School Psychological Examiner and Remedial Reading Teachers. (Offered occasionally.)

**EDS.555 Advanced Assessment Procedures in Special Education (3)**

Advanced concepts and methods in individual and group assessments. Focus on analysis and integration of test data, setting instructional objectives. Sections offered according to certification area. (Offered occasionally.)

**EDS.560 Seminar: Special Education (3)**

Prerequisite: Completion of Advanced Special Education Methods Course. Introduction to graduate study in special education. The philosophy of science, research methodology and professional issues relating to the body of

knowledge and practice in special education are discussed. Required of all special education graduate students. (Offered annually.)

**EDS.561 Seminar: Mental Retardation (3)**

Prerequisite EDS.1443 or equivalent. A graduate-level study of the etiology, developmental characteristics, diagnosis, educational programs, family implications, social aspects of mental retardation. (Offered occasionally.)

**EDS.562 Seminar: Learning Disabilities (3)**

Prerequisite: EDS.444 or equivalent. An interdisciplinary approach to the etiology, diagnosis and remediation strategies of learning disabilities with reference to both categorical and non-categorical orientation in special education. (Offered occasionally.)

**EDS.563 Seminar: Behavioral Disorders (3)**

Prerequisite: EDS.445 or equivalent. A survey of the prominent educational theories presenting explanations for the development of behavioral disorders; study of the major systems of instructional practice with application to the general field of special education. (Offered occasionally.)

**EDS.564 Seminar in Early Childhood Special Education (3)**

Prerequisite: EDS.452. A graduate seminar to examine issues related to early childhood special education. Topics include theoretical perspectives, legislative issues, family involvement and infant programming. Study includes research and how it relates to practice in ECSE. (Offered occasionally.)

**EDS.594 Special Education Internship (3)**

Prerequisite: Advanced graduate standing and consent of Instructor. Integration of academic studies with administrative practice, clinical diagnosis procedures, community programs, consultant services, educational programming, research, social trends or other experiences specific to career goals. Emphasizes the relationship between scientific inquiry and professional practice. (Offered occasionally.)

**EDS.595 Special Study for Exams (0)****EDS.598 Graduate Reading Courses (1-3)**

Prior permission of guiding professor required.

**EDS.611 Special Education Administration (3)**

Designed to prepare the administrator for management of programs in special education. The focus is on budget, legislation, organization, management. Local, state and federal programs pertaining to special education discussed, as well as the preparation of grant proposals. Evaluation of programs and personnel. (Offered occasionally.)

**EDS.615 Advanced Professional Development (3)**

Preparation of students for advanced responsibilities in career roles as special educators. Application of academic learning to professional situations. (Offered occasionally.)

**EDS.650 Advanced Seminar: Special Education (3)**

An in-depth examination of critical issues in special education. Course will be sectioned according to area of specialization. (Offered occasionally.)

## PUBLIC POLICY STUDIES

**Robert A. Cropf, Ph.D.,**

*Department Chairperson*

The graduate programs of the Department of Public Policy Studies provide a unique interdisciplinary range of educational experiences and research. The department has participated in over \$8 million of funded research including projects for the U.S. Departments of Labor, Education, and Justice, Health and Human Services, the Brookings Institution, and a variety of regional, state, and local public and private entities. In addition to its core faculty, the Department includes joint appointed-faculty from the Schools of Business and



Administration, Law, Public Health, and Social Work and the Departments of Political Science, Psychology, and Sociology/Anthropology. These inter-disciplinary resources under gird the analytical reasoning essential to addressing the public policy environment.

## Master of Public Administration

**James F. Gilsinan, Ph.D.,**  
*Program Director*

The Master of Public Administration (MPA) degree program is accredited by the National Association of Schools of Public Affairs and Administration.

### Prerequisites

At least 18 semester-hours in advanced social science or business courses. Introductory inferential statistics course or its equivalent.

### Required Courses

PPS.501 Research Methods  
PPS.503 Issues in American Public Administration;  
PPS.512 Introduction to Public Sector Budgeting;  
PPS.515 Economics of the Public Sector;  
PPS.540 Organizational Theory and Behavior; and  
PPS.541 Administrative Law.

### Additional Requirements

Pre-service students are required to take a three-credit-hour internship. A total of 36 or, with the internship, 39 credit hours is required.

*A formal minor is not allowed.*

## Master of Arts in Urban Affairs

**E. Allan Tomey**  
*Program Director*

### Prerequisites

Undergraduate or graduate degree in an urban-related discipline, or at least 18 hours in social-science coursework. Introductory inferential statistics course or its equivalent. Students lacking practical field experience may be required to take PPS.589: Field Service.

### Required Courses

PPS.500 The Metropolis;  
PPS.501 Research Methods  
PPS.510 Urban Economic Development;  
PPS.530 Planning the Metropolis;  
PPS.531 Land Use Planning and Analysis  
PPS.550 History of Cities and Planning.

### Additional Requirements

Students without experience in Urban Affairs are required to take a three-credit-hour internship. A total of 36, or with the internship, 39 credit-hours is required.

*A formal minor is not allowed.*

## Master in Urban Planning and Real Estate Development

**Sarah Coffin, Ph.D.,**  
*Program Director*

This degree is offered in collaboration with the School of Business and Administration and the School of Law. The mission of Saint Louis University's Program in Urban Planning and Real Estate Development is to provide a center for education, community dialogue, and research to support urban growth and revitalization in the St. Louis region and globally.

### Prerequisites

Undergraduate degree in a related field or at least 18 hours of related coursework. Introductory inferential statistics course or its equivalent.

### Required Courses

PPS.500 The Metropolis or  
PPS.550 History of Cities and Planning;  
PPS.501 Research Methods;  
PPS.510 Urban Economic Development or PPS.515 Public Sector Economics;  
PPS.525 Infrastructure Planning and Processes;  
PPS.530 Planning the Metropolis;  
PPS.531 Land Use Planning and Analysis;  
LWL.768 Land Use Control; and  
FINB.628 Real Estate Finance.

### Additional Requirements

PPS.544 Planning and Development Studio;  
PPS.585 Capstone/Project; and  
PPS.594 Internship (for pre-service students).

A total of 45 hours is required, including the internship; otherwise, the total is 42 hours.

## Master of Public Administration/Juris Doctor Masters of Arts in Urban Affairs/Juris Doctor

Applicants must be admitted to both degree programs. Required and elective coursework is integrated such that six semester-hours taken in the Master's program are counted toward the J.D. degree, and twelve credit-hours in the law

curriculum comprise elective hours toward the Master's degree.

## Doctor of Philosophy in Public Policy Analysis

**Scott Cummings, Ph.D.**  
*Program Director*

The doctoral program in Public Policy Analysis and Administrative has two broad objectives. The first objective is to produce graduates with the ability to utilize the analytical and administrative techniques drawn from the field of Public Policy Studies. The second objective is to provide policy research and administrative training that will allow students to enter or enhance careers in teaching, policy research, public administration and the non-profit sector, or a combination of these. The course of study has its foundation in the social sciences, but also draws upon other fields such as health services research and administration, social work, accounting and finance. The program is firmly grounded in theory and applied research, and requires students to blend academic rigor with practical approaches to policy analysis and administration.

### Prerequisites

Master's degree; social-science-theory prerequisites may be required; inferential statistics, graduate-level research methods, micro or macro budgeting and finance; significant policy making experience.

### Required Courses

PPS.506 Qualitative Research and Evaluation Methods;  
PPS 530 Planning the Metropolis  
PPS.540 Organization Theory and Behavior;  
PPS.545 The Policy Process;  
PPS.578 Program Evaluation;  
PPS.600 Scope and Methods of Policy Analysis;  
PPS.611 Economics of the Government and Federal Sector  
PPS.612 Financing the Public Sector;  
PPS 689 Advanced Quantitative Analysis

### Additional Requirements

The concentration areas are usually composed of 15 credit hours of study, depending upon previous coursework and policy background in one of the following areas: public administration and organizational theory, applied research, urban and community development policy or health policy. Post-Master's academic work before preliminary degree exams: typically 42 credit-hours.

*A formal minor is allowed.*

## Certificate in Geographical Information Systems

**Joanna Ganning, Ph.D.**  
*Program Coordinator*

The Geographical Information Systems (GIS) certificate program prepares students for careers as GIS specialists in various fields, but particularly public administration and planning. The Stupp Geographic Information Systems Lab, located in Litteken Hall within the College of Education and Public Service, provides a state-of-the-art instructional setting. GIS is a powerful software technology that permits information to be linked to a geographic location, enabling a user to see regions, countries, and neighborhoods with clarity, and showing layers of information, e.g., demographic, environmental, or health characteristics. Prerequisites for pursuing the certificate are a bachelor's degree with appropriate background in statistics and research. Entry/approval must be sought through Graduate School Admissions; the certificate may be taken parallel with a graduate degree program or by itself. A total of fifteen semester-hours is required, including: PPS.435 or 535, 536, 537, 538, and 586.

## Certificate in Organizational Development

**Robert Krizek, Ph.D.**  
*Academic Advisor, Department of Communication*

The Certificate in Organizational Development is an interdisciplinary graduate-level program that focuses on how organizations can be made more effective. It is designed to serve the needs of professionals in government, business, education and non-profits, and educate them to stimulate, guide, and evaluate change and development within their respective organizations. The Certificate can be earned in connection with several different degree programs at Saint Louis University, such as Communication, Educational Leadership, Psychology and Public Policy Analysis, or as a stand-alone program.

### Curriculum

The program involves 15 credit hours, depending on other coursework taken at the graduate level. The program is anchored in three core Organizational Development competencies. Students take a core course for each of the three competency areas below, plus an elective chosen from any of three elective lists. Curriculum is outlined as follows:

#### Core: Three (3 credit hour) courses:

PPS.540 Organizational Theory and Behavior  
PSY.649 Organizational Change and Development  
CMM.518 Organizational Communication  
Elective: One (3 credit hour) course  
Capstone Project: 3 credit hours

The capstone project will involve assessment of an organizational problem or opportunity (ideally derived from the candidate's work setting) and design of an intervention

through the application of specific program core competencies. A written report describing the project will be submitted for review by the candidate's project committee.

### **Possible Additional Electives**

CMM.520 Communication Ethics  
 EDL.520 School-Community Relations  
 EDR.550 Evaluation of Educational Programs  
 EDL.573 Professional Staff Development and Evaluation  
 EDL.610 Theory of Administration  
 EDL.620 Ethics of Educational Leadership  
 PPS.503 Issues in Public Administration

## **COURSE DESCRIPTIONS**

### **Upper-Division Courses**

**PPS.400 Politics and Ecology (3)**

**PPS.408 Urban Issues: Poverty and Unemployment (3)**

**PPS.410 Introduction to Urban Economics (3)**

**PPS.411 Urban Employment and Training Policy (3)**

**PPS.415 Introduction to Public Finance and Budgeting (3)**

**PPS.420 Urban Ecology: Communities and Neighborhoods (3)**

**PPS.421 Conflict Management Strategies (3)**

**PPS.425 Urban Classics (3)**

**PPS.426 The Census and Neighborhood Analysis (3)**

**PPS.432 Administrative Law (3)**

**PPS.433 Comparative Urban and State Politics (3)**

**PPS.435 Geographic Information Systems (3)**

**PPS.450 Research Methods (3)**

**PPS.460 Law, Courts, and Urban Change (3)**

**PPS.462 Probation, Parole and Community Corrections (3)**

**PPS.465 Urban Criminal Justice Policy (3)**

**PPS.490 Field Service (3)**

### **Graduate Courses**

**PPS.500 The Metropolis (3)**

Seeks to impart an understanding of the economic, social, and political organization of American cities and metropolitan areas. Utilizes problematic topical areas (e.g. fiscal problems, political behavior, socio-demographic change) as organizing themes for study and seminar discussion. (Offered every Fall semester.)

**PPS.501 Research Methods (3)**

Graduate introduction to the process and methods of research with emphasis on evaluation designs and techniques. Examples drawn from urban affairs, urban planning and real estate development, and public administration. (Offered every semester.)

**PPS.503 Issues in American Public Administration (3)**

Examines role of public administration in U.S. Historic evolution of public administration. Current issues in field: privatization, quotas, affirmative action, whistle-blowing, etc. (Offered every Fall semester.)

**PPS.505 Special Topics: Urban and Administrative Theory (3)**

Theories of public responsibility, management in the public sector, and other selected conceptual/theoretical frameworks for analyzing urban/metropolitan issues can be explored. (Offered occasionally.)

**PPS.506 Qualitative Research and Evaluation Methods (3)**

Descriptive research methods including participant observation, oral history, and photography and their application to program evaluation and policy analysis. (Offered every Spring semester.)

**PPS.508 Legal Research (2-3)**

An introduction to the tools for conducting legal research and finding legislative intent. (Offered occasionally.)

**PPS.510 Urban Economic Development (3)**

Factors determining business, industrial and commercial location. Techniques used in analyzing metropolitan economic growth and methods used by industrial development organizations to attract business firms. (Offered every Fall semester.)

**PPS.512 Introduction to Public Sector Budgeting (3)**

Public budgeting at all levels of government; economic and political aspects of budgeting. Features in-class budget simulation. (Offered every Fall semester.)

**PPS.515 Economics of the Public Sector (3)**

Introduction to economics of the public sector. Specific issues regarding welfare economics, expenditure programs, and taxation. (Offered every Spring semester.)

**PPS.518 Public Personnel Administration (3)**

Focus is on such topics as development of public service employment the rise of public employee unions, recruitment, training, performance appraisals, productivity, motivation, pay and benefits, and the legal aspects of public personnel administration. Sample issues: comparable worth, affirmative action, health care, discriminatory employment practices, and sexual harassment. (Offered occasionally.)

**PPS.520 Crime, Justice and Public Policy (3)**

Socio-political parameters of crime and society's policy response to it. (Offered every other year.)

**PPS.521 Urban and Community Development Policy (3)**

Introduces master and doctoral students to contemporary and historical issues shaping urban and community development policy. A number of topics will be covered: Strategies to redevelop central cities, including arts, entertainment, and stadium construction; community and neighborhood development, including housing policy, historic preservation, and community redevelopment corporations; enterprise zones and targeted economic redevelopment policy; regional fragmentation and suburbanization; the new urbanism and edge city development. (Offered annually)

**PPS.525 Infrastructure Planning and Processes (3)**

Focus is on provision of urban infrastructure services. The course covers the planning, technical, and financial aspects of transportation, water supply systems, sanitation, and sewerage. Includes the discussion of regional needs assessment, impacts, and the development of regional management systems. (Offered every year.)

**PPS.530 Planning the Metropolis (3)**

Introduces master's and Ph.D. students to the multiple facets of city/urban regional planning. Examining the context, theory, process, and practice of planning and development policy. (Offered every Fall semester.)

**PPS.531 Land Use Planning and Analysis (3)**

Skills, issues, and policies involved with site analysis and design in both new development and redevelopment contexts. (Offered every Spring semester.)

**PPS.535 Introduction to Geographic Information Systems (3)**

This introductory course provides an overview of conceptual, technical, and procedural aspects of Geographic Information Systems (GIS) for use in the social sciences. Conceptually, this course delivers an understanding of what GIS is and the basic functions it serves. Technically, students will learn the data and design principles for general cartography and will be introduced to

some spatial analysis tools. Procedural topics include basic data management concepts and standards for map production.

**PPS.536 Science, Technology, and Public Policy (3)**

Focus is on the impact of science and technology (particularly information technology) on public organizations, public policy, and society. The course is designed for those who work with or want to understand the dynamics such technology introduces into organizations. (Offered every Spring semester.)

**PPS.537 Introduction to Geographic Information Systems (3)**

Intermediate GIS provides a more in-depth coverage of spatial processing and analysis tools to help students gain confidence in their use and more fully understand what is available within the ArcGIS software. Through project-based work, the class also provides a skill set to navigate GIS “problems” that occur in the real world along several themes: metadata, projections, data management, and incorporating custom maps into written documents. The course concludes with an introduction to working with rasters.

**PPS.538 Advanced Geographic Information Systems Concepts**

Prerequisite: PPS.535. This advanced course has two primary focuses: an overview of free or open source GIS software programs, and an introduction to spatial statistics. GIS programs include GeoDa, HAZUS, GRASS, and some GIS functionality in R. Specific to the focus on spatial statistics, students will learn to evaluate spatial clustering, identify spatial clusters, and evaluate spatial questions raised by current topics in urban planning and public administration.

**PPS.540 Organizational Theory and Behavior (3)**

General focus is on theories and schools that provide insights into organizational life. Emphasis is given to public bureaucracies. Topics include motivational theory, management behavior. Policy evaluation and the like. (Offered every Fall semester.)

**PPS.541 Administrative Law (3)**

Seminar discussions focus on the search for procedural due process in public administration. Specific attention is devoted to administrative law doctrines and principles pertaining to rule-making, agency hearings, administrative discretion, damage actions, reviewability, scope of review, and administrative searches and seizures. Administrative law cases are thoroughly discussed. (Offered every Spring semester.)

**PPS.542 Quantitative/Qualitative Modeling (3)**

Course explores a combination of quantitative and qualitative methods. Introduces the data and methods in participant observation and ethnography. Exposes students to modeling in transportation, regional economic development, and planning analysis.

**PPS.543 Environmental Planning and Risk Management (3)**

Course focuses on understanding the impact of planning and development on the natural environment as well as on the challenges of managing environmental risks. (Offered every year.)

**PPS.544 Planning and Development Studio (3)**

Studio experience for the UPRD program. Focus is on developing and refining research, analytic, and graphic presentation skills as students work on actual planning and development projects. (Offered every Fall and Spring semester.)

**PPS.545 The Policy Process (3)**

Course deals with various inputs into the American policy-making process through legislative, executive and judicial branches of the government. Particular attention is focused on the impact of legislative law, administrative rule and judicial order on our political system. (Offered every year.)

**PPS.546 Organizational Psychology (3)**

Examination of organizational theory with special emphasis on systems theory. Topics include history, subsystems, growth, role theory and organizational models. Organizational behavior topics include motivation, leadership and change. (Offered every Fall semester.)

**PPS.547 Organization Analysis (3)**

Introduction to and critical review of major sociological perspectives or organizations. Special emphasis is given to recent theoretical advances that emphasize the political and socially constructed character of organizations. (Offered occasionally.)

**PPS.548 Psychology of Small Groups (3)**

Prerequisite: Limited enrollment by permission of Instructor. Theory, research and practice in small group behavior. Use of laboratory experimental learning methodologies. (Offered every year.)

**PPS.550 History of Cities and Planning (3)**

Analysis of the origins, growth and decline of selected cities of Europe (e.g. Athens, Rome, Paris, London) and America (e.g. Boston, Savannah, St. Louis, Chicago) during major historical periods (e.g. Medieval, Renaissance, Industrial Revolution, Post-Industrial). The influence of design trends and planning on the built environment will be analyzed where appropriate. (Offered every year.)

**PPS.535 Introduction to Geographic Information Systems (3)**

This introductory course provides an overview of conceptual, technical, and procedural aspects of Geographic Information Systems (GIS) for use in the social sciences. Conceptually, this course delivers an understanding of what GIS is and the basic functions it serves. Technically, students will learn the data and design principles for general cartography and will be introduced to some spatial analysis tools. Procedural topics include basic data management concepts and standards for map production.

**PPS.537 Introduction to Geographic Information Systems (3)**

Intermediate GIS provides a more in-depth coverage of spatial processing and analysis tools to help students gain confidence in their use and more fully understand what is available within the ArcGIS software. Through project-based work, the class also provides a skill set to navigate GIS “problems” that occur in the real world along several themes: metadata, projections, data management, and incorporating custom maps into written documents. The course concludes with an introduction to working with rasters.

**PPS.538 Advanced Geographic Information Systems Concepts**

Prerequisite: PPS.535. This advanced course has two primary focuses: an overview of free or open source GIS software programs, and an introduction to spatial statistics. GIS programs include GeoDa, HAZUS, GRASS, and some GIS functionality in R. Specific to the focus on spatial statistics, students will learn to evaluate spatial clustering, identify spatial clusters, and evaluate spatial questions raised by current topics in urban planning and public administration.

**PPS.560 Law, Courts, and Urban Social Change (3)**

Seminar on the role of law, courts and the judicial process on urban social, economic and physical change. (Offered occasionally.)

**PPS.570 Health Policy (3)**

A course in health policy for advanced graduate students. The purposes of the course are to orient the students to the policy process, to increase the student’s understanding of the nature of health policy making and health politics and to provide the student with an opportunity to develop an in-depth understanding of current health care issues. (Offered every year.)

**PPS.576 Poverty Policy (3)**

A multidisciplinary analysis of poverty and its impact on contemporary urban America. Remedial public policies, from Medieval and Victorian England to current American welfare reforms will be studied and evaluated. Related functional reforms (e.g. health care, housing will be appropriately considered insofar as they affect poverty policy. (Offered occasionally.)

**PPS.578 Program Evaluation (3)**

Based in social action research theory and strategy, the course presents frameworks for summative and formative approaches to assessing programs. Actual evaluation experience is included. (Offered every fall semester.)

**PPS.585 Capstone/Project (3)**

This is the final course in the UPRD program. Students work independently with a capstone advisor developing a project that demonstrates individual mastery of professional planning and development competencies. (Offered every Fall and Spring semester.)

**PPS.586 Geographic Information Systems Capstone (3)**

Prerequisite: PPS.538. A laboratory experience toward providing an instrument to consolidate and to enable the demonstration of the mastery of professional GIS competencies. (Offered each semester.)

**PPS.589 Field Service (1-6)**

Field experience by the student as community organizer, research assistant or administrative intern with a voluntary association, community organization or public or private agency. A paper evaluating the field experience is required. (Offered every semester.)

**PPS.591 Journal Club (0)**

Readings and/or presentations in recent research specialty area. (Offered every semester.)

**PPS.593 Special Topics (1-3)****PPS.594 Internship (3)****PPS.595 Special Study for Examinations (0)****PPS.597 Research Topics (1-3)**

Prior permission of guiding professor and department chair required.

**PPS.598 Graduate Reading Course (1-3)**

Prior approval of guiding professor and department chair required.

**PPS.5CR.90 Master's Degree Study (0)****PPS.600 Scope and Methods of Policy Analysis (3)**

Introduction to the theories, models, concepts and methods of policy analysis relevant to urban areas and constituencies. Topics under review vary depending on students' interests.. (Offered every Fall semester.)

**PPS.605 Policy Ethics/Social Responsibility (3)**

A case study approach to ethical decision making in public management. (Offered every Spring semester.)

**PPS.608 Industrial Organizations and Anti-Trust Policy (3)**

Microeconomics theory of utility and demand; theory of production, cost, and supply; price determination for factors and products under varying market structures; efficiency in allocation of resources; welfare issues. (Offered occasionally.)

**PPS.609 Industrial Organization and Regulatory Policy (3)**

An evaluation of market versus regulatory control of business. Topics include welfare theory with particular emphasis on market failure, theories of government intervention, required revenue and rate determination through regulation, case studies of specific regulatory issues, and other matters. (Offered occasionally.)

**PPS.611 Economics of Government-Federal Sector (3)**

Allocation, stabilization, and distribution functions of government in the national economy. Optimum theory of budget policy; problems of the satisfaction of public wants; theories of taxation, alternative tax policies, their differential impact on revenue yield, equity and economic efficiency. Incidence theory, output and income effects of budget policy. Taxation reform proposals. (Offered occasionally.)

**PPS.612 Financing the Public Sector (3)**

The public finance functions of governments: Stabilization, allocation, and distribution. Elements of a good tax structure; in-depth analysis of revenue sources. (Offered every Spring semester.)

**PPS.630 Power, Coalition and Decision-Making (3)**

Intensive consideration of power, coalition and decision theory and models for purposes of describing and analyzing behavior and policy outcomes in communities and formal organizations. (Offered occasionally.)

**PPS.635 Judicial Policy Making (3)**

The role of the judiciary in the policy making process is examined and compared with the roles of legislators and policy implementers. (Offered occasionally.)

**PPS.636 Economics of Government – State and Local Sector (3)**

Role of governments in the modern economy. Alternative expenditure policies and financing techniques, taxation, borrowing, sale of governmental services, intergovernmental aid. Metropolitan area finances; role of

expenditures and financing in resolving urban problems. (Offered occasionally.)

**PPS.639: Contemporary Issues in Social Psychology (3)**

Advanced seminar in newly developing areas of social psychology. (Offered occasionally.)

**PPS.649 Topics: Organizational Psychology (3)**

Advanced seminar in newly developing areas of organizational psychology. (Offered annually.)

**PPS.650 Introduction to the Nonprofit Sector (3)**

The course examines the American nonprofit sector and administration of nonprofit organizations. It analyzes the nonprofit sector from the perspective of civil society and political economy. Furthermore, the course examines nonprofit organization management from the perspective of voluntarism and citizen participation. (Offered annually.)

**PPS.663 Consultation Skills (3)**

Theories, types and goals of consultation as well as relevant research associated with each type of consultation. Primary focus on training in systems consultation and its evaluation. (Offered every summer.)

**PPS.670 Seminar: Law and Society (3)**

Examination of the complexities and concerns inherent in sociological and legal understanding of the relationship between law and society. (Offered occasionally.)

**PPS.678 Corrections Policy (3)**

In the context of public policy planning and analysis, community-based corrections are examined. Emphasis on methods to evaluate various correctional innovations. (Offered occasionally.)

**PPS.681 Policy Implementation Theory (3)**

Focuses on the interaction among program and policy decision, program delivery, and program evaluation. Emphasis on conceptualizations and procedures for political feasibility analysis and for program output and impact assessment. (Offered occasionally.)

**PPS.689 Advanced Quantitative Analysis (3)**

Research seminar entailing computerized multi-variate statistical analysis.

**PPS.693 Special Topics (1-3)****PPS.695 Special Study for Examinations (0)****PPS.697 Research Topics (1-3)**

Prior permission of guiding professor and department chair required.

**PPS.698 Graduate Reading Course (1-3)**

Prior permission of guiding professor and department chair requested.

**PPS.699 Dissertation Research (0)****GRADUATE OFFERINGS IN****School of Social Work****Donald M. Linhorst, PhD., MSW, ACSW,**

*Director of the School*

The School of Social Work at Saint Louis University began in 1930 and has a long-standing reputation of preparing professionals who excel in practice and have strong social justice commitments. The School offers two graduate degrees: the Master of Social Work degree and the Master of Science in Applied Behavior Analysis degree.

# Master of Social Work (MSW) Degree

**Janice Chadha, Ph.D., MSW**, *Director of the MSW Program*

The MSW degree prepares social work professionals for work with vulnerable populations facing health, social, and economic challenges. Social workers are educationally prepared to provide services including therapy, policy advocacy, case management, group work, crisis intervention, children and family practice, and leadership for nonprofit organizations. MSW level social workers work in a wide variety of human service organizations including family and community centers, mental health and treatment centers, hospitals, schools, nonprofit agencies, residential children's or adult centers, justice centers, and many more organizations. The MSW Program has been accredited continuously by the Council on Social Work Education (CSWE).

The MSW curriculum includes generalist foundation courses, advanced practice courses in an area of concentration, and field practicum. The generalist foundation courses provide the basic social work theory and methods for working with individuals, families, and groups, organizations, and communities. Students then select an advanced practice area of concentration and proceed with taking these courses. The School of Social Work offers four concentrations: Applied Behavior Analysis, Community and Organization, and Family, and Health and Mental Health. During the coursework, students will also be mentored by a MSW field instructor while working as a student in a social work capacity in the community. The MSW degree is 57 credit hours, with full-time and part-time options available. Students with a Bachelor of Social Work degree from a CSWE accredited program may earn up to 18 credit hours of advanced standing toward the MSW degree.

## Prerequisites

A bachelor's degree from an accredited college or university with at least 24 credit hours in liberal arts and the social sciences. The Graduate Record Exam (GRE) is not required.

## Required Courses

SWRK 750 Social Work Practice with Individuals, Families, and Groups  
 SWRK 751 Social Work Practice with Communities and Organizations  
 SWRK 702 Social Policy  
 SWRK 707 Policy Practice for Social Justice  
 SWRK 787 Research Methods for Social Work Practice I  
 SWRK 788 Research Methods for Social Work Practice II (all concentrations except ABA)  
 SWRK 700 Values and Ethics in Social Work Practice (all concentrations except ABA)  
 SWRK 821 Practicum I (2 Credits)  
 SWRK 819 Foundation Integrative Seminar (1 Credit)  
 SWRK 822 Practicum II (2 Credit Hours)

SWRK 820 Concentration Integrative Seminar (1 Credit)  
 SWRK 823 Practicum III  
 SWRK 824 Practicum IV

## Concentrations and Required Courses

### *Applied Behavior Analysis*

This concentration focuses on evidenced-based methods to assist children, adults, and organizations with changing challenging behaviors. Curriculum prepares for being eligible to become a Board Certified Behavior Analyst.

SWRK 746 Principles and Concepts in Behavior Analysis  
 SWRK 747 Assessment and Selecting Interventions  
 SWRK 748 Behavior Change and Processes  
 SWRK 792 Special Topics in ABA  
 SWRK 774 Measurement and Experimental Design  
 SWRK 749 Behavior Change and Ethics

### *Community and Organization*

The concentration courses focus on leadership, advocacy, and administration roles in social work. Students develop knowledge and skills in policy advocacy, nonprofit administration, or community organization and development.

SWRK 737 Organizational Theory and Leadership  
 SWRK 721 Community Theory and Practice

### *Family*

The concentration courses focus on understanding transitions and challenges faced by families. Courses provide preparation for work as a therapist or family practice social worker in a wide range of agencies serving families with challenges of poverty, abuse, foster care, addiction, violence, and other challenges. In addition, coursework prepares for work with children and adolescents in schools and other settings.

SWRK 741 Family Interaction Under Stress  
 SWRK 757 Foundations of Family Practice

### *Health and Mental Health*

The concentration courses focus on working with persons and families experiencing health and mental health challenges. The coursework has a recovery and consumer based approach in working with persons with co-occurring disorders of addiction and mental health. In addition, the coursework prepares students for community mental health practice as well as interdisciplinary team practice in a variety of health and mental health settings. Students are also able to take courses related to gerontology.

SWRK 734 Health and Human Behavior  
 SWRK 755 Social Work Practice in the Health Field  
 SWRK 742 Clinical Diagnosis and Interventions in Mental Health

## Specializations and Certificates

MSW students have the option to direct elective courses to a specialization or certificate. While not required, they provide students with additional, focused expertise. Options exist in the following areas: Specializations in Clinical Practice with Families, Community Mental Health Practice, or Nonprofit Administration; Certificate in Gerontology. Nonetheless, students will take two to four elective courses depending on

the concentration in addition to requirements to complete the 57 credit program.

## Master of Science in Applied Behavior Analysis (ABA)

**Ellen M. Burkemper, PhD, MSW, LCSW,**  
*Director of ABA Programs*

Applied Behavior Analysis is the scientific study of human behavior in relationship to the environment. The Master of Science in Applied Behavior Analysis (MSABA) degree prepares students for professional practice using behavioral science to promote positive social change and learning in people with autism, intellectual disabilities, substance abuse problems, and other health and mental health conditions. Successful completion of the degree provides eligibility to complete the examination for national certification as a Board Certified Behavior Analyst (BCBA) and for licensure in Missouri and some other states.

The first six courses listed below must be taken in order of presentation throughout the year. That is, two courses in the fall, two courses in the spring, and two courses in the summer. Other requirements for the degree may be scheduled in collaboration between the student and the student's advisor, with full-time and part-time options available. The MSABA is a 39 credit hour degree.

### Prerequisites

A bachelor's degree from an accredited college or university with some course work in social sciences. The Graduate Record Exam (GRE) is not required.

### Required courses

ABA 746 **Principles and Concepts in Behavior Analysis**  
ABA 774 **Measurement and Experimental Design**  
ABA 747 **Assessment and Selecting Interventions**  
ABA 748 **Behavior Change and Processes**  
ABA 749 **Behavior Change and Ethics**  
ABA 792 Special Topics in ABA  
ABA 826 Practicum I  
ABA 820.48 Integrative Seminar  
ABA 827 Practicum II  
ABA 820.49 Integrative Seminar  
ABA 828 Practicum III  
ABA 820.50 Integrative Seminar  
ABA 599 Thesis (6 credits)  
ABA 595 Special Study for Exams  
Two elective courses

## Post-Master's Certificate in Applied Behavior Analysis

Students take six regular classroom courses (18 credit hours), and may elect to engage in three practicum courses (9 credit hours). Successful completion of course work and practicum experience provides eligibility to complete the examination for national certification as a Board Certified Behavior Analyst (BCBA) and for licensure in Missouri and some other states.

The six courses listed below must be taken in order of presentation throughout the year. That is, two courses in the fall, two courses in the spring, and two courses in the summer. The practicum credit, if taken, may be scheduled in collaboration between the student and the student's advisor, with full-time and part-time options available.

### Prerequisites

A master's degree from an accredited college or university with some course work in social sciences. The Graduate Record Exam (GRE) is not required

### Required Courses

ABA 746 **Principles and Concepts in Behavior Analysis**  
ABA 774 **Measurement and Experimental Design**  
ABA 747 **Assessment and Selecting Interventions**  
ABA 748 **Behavior Change and Processes**  
ABA 749 **Behavior Change and Ethics**  
ABA 792 **Special Topics**

## Dual Degrees

The School of Social Work has partnerships with other Saint Louis University departments and two other educational institutions to offer dual degrees. Students must apply separately for admission to both academic units. These dual degrees are designed to blend social work with another discipline to enable graduates to have additional preparation and expertise for certain career fields. These dual degrees have the advantage of less credit hours and expense as both degrees accept courses from the other to count for their degree as well. The School of Social Work has five dual degrees, all with the MSW degree. They include:  
MSW/ Master of Public Health (MPH)  
MSW/Master of Public Administration (MPA)  
MSW/Law-Juris Doctorate (JD)  
MSW/Master of Pastoral Studies with Aquinas Institute (MAPS)  
MSW/Master of Arts in Deaconess Studies with Concordia Seminary (MDeac)

### Course Descriptions

#### ABA 746 Principles and Concepts in Behavior Analysis

This course familiarizes students with the fundamental concepts and principles and philosophical assumptions of behavior analysis as well as the basic concepts of operant and respondent conditioning. Students review some of the basic laboratory research that has illuminated the principles of behavior. The material covered contributes to prepare students to work in the field of behavior analysis and related fields for board certification in Applied Behavior Analysis. Course content supports the social work value of social justice to provide professional services to persons with disabilities.

#### ABA 774 Measurement and Experimental Design

This course develops students basic knowledge related to single subject research design, measurement and application of the empirical approach to

evaluation of effectiveness of interventions in the field of applied behavior analysis. Students review some of the basic assumptions and characteristics that define the field. The material covered prepares students for work in the field of behavior analysis/related field and for board certification in Applied Behavior Analysis. Course content supports the social work value of social justice to provide professional services to persons with disabilities.

#### **ABA 747 Assessment and Selecting Interventions**

This course develops students' basic knowledge with respect to behavioral assessment methodologies, and the selection and design of interventions in the field of applied behavior analysis. This course reviews some of the basic assumptions and characteristics that define the field. The material covered prepares students to work in the field of behavior analysis/related field and for board certification in Applied Behavior Analysis. Course content supports the social work value of social justice to provide professional services to persons with disabilities.

#### **ABA 748 Behavior Change and Processes**

This course expands students' basic knowledge with respect to behavior analysis fundamental concepts and principles and philosophical assumptions including the basic behavioral principles of operant and respondent conditioning. This course develops students working understanding of the use of these principles in behavior change strategies and interventions in the field of applied behavior analysis. Students review some of the fundamental applied literature that demonstrates the efficacy of behavioral strategies and that continue to define the field. The material covered prepares students for work in the field of behavior analysis/related field and for board certification in Applied Behavior Analysis. Course content supports the social work value of social justice to provide professional services to persons with disabilities.

#### **ABA 749 Behavior Change and Ethics**

This course familiarizes students with the ethical issues confronting those working in a behavior analytic (or related) capacity. Students learn the ethical responsibilities inherent to working in their chosen field. Ethical codes and cases are analyzed. Topics include gaining informed consent, protecting confidentiality, selection of the least intrusive behavior change methods and procedures, and protecting individual rights. The ethical standards prepare students for work in the field of behavior analysis/related field and for board certification in Applied Behavior Analysis. Course content supports the social work value of social justice to provide professional services to persons with disabilities.

#### **ABA 792 Special Topics in ABA**

This course builds upon the basic principles of learning and applied behavior analysis presented during previous courses in the Behavior Analysis curriculum. The course offers advanced coverage of special topics, including: Clinical practice, Autism, and Organizational Behavior Management. Clinical behavior analysis focuses on the use of verbally based interventions to treat persons in outpatient/clinical settings. In the behavior analysis and autism section of the course, students review diagnostic criteria and evidence based practices. The Organizational Behavior Management section of the course provides an overview of contemporary research and practice in the field. Course content supports the social work value of social justice to provide professional services to persons with disabilities.

#### **ABA 826 Practicum I**

Students will learn to integrate knowledge, values, and skills to develop a professional level of practice with specific emphasis in applied behavior analysis.

#### **ABA 820.48 Integrative Seminar I; ABA 820.49 Integrative Seminar II; ABA 820.50 Integrative Seminar III**

This is a three part graduate level course that will ensure that students are able to successfully complete all three practicum. This course will teach students how to apply behavior analysis in a clinical environment. Students will learn to behave professionally and ethically in an applied context. In addition, students will gain an advanced understanding of the application of behavior analysis principles. Students will gain this understanding by conducting behavioral interventions, designing, implementing, and monitoring behavior change programs, overseeing the implementation of behavior-change programs implemented by others, attending behavioral program planning meetings, and reviewing relevant empirical literature. The review of empirical literature allows students to learn how research should inform clinical practice. Students will gain competency in working with multiple populations, including (but not limited to) typically functioning school children, individuals with developmental disabilities, and individuals with mental illness. The material covered in this course will prepare students working in

the field of behavior analysis and related fields for board certification in Applied Behavior Analysis.

#### **ABA 827 ABA Practicum II**

Students will continue learn to integrate knowledge, values, and skills to develop a professional level of practice with specific emphasis in applied behavior analysis.

#### **ABA 828 ABA Practicum III**

Students will continue learn to integrate knowledge, values, and skills to develop a professional level of practice with specific emphasis in applied behavior analysis.

#### **ABA 595 Special Study for Exams (0 credit hours)**

#### **ABA 599 Thesis (6 credit hours)**

Students conduct original research and write a thesis that reflects independent thought and thorough knowledge of applied behavior analysis.

#### **SWRK 700 Values and Ethics in Social Work Practice**

This course is a comprehensive review of the values and ethical dimensions of social work practice.

#### **SWRK 701 Social Justice: Human Liberation and Community-Building**

This course explores the meaning of social justice, community building, human liberation and environmental parity within the context of social work practice. Based on social work's historical mission of intervention in high-risk communities while advocating for social reform, this course is aimed at teaching students the history, theory and practice realities of community building locally and globally.

#### **SWRK 702 Social Policy**

This course focuses on social policy within the context of its historical development and its current functions within contemporary society. It examines the substance of policy choices, the values and beliefs that underlie these choices, the political process through which the choices are made, and the potential roles of social workers in that process.

#### **SWRK 703 International Social Work**

##### ***Section 01 Experiencing Community among the Poor of Mexico***

This is a two-week experiential course that requires travel to Cuernavaca, Mexico. Students will learn about social and economic development at the neighborhood level, community organizing and social ministry through the eyes, hearts and minds of the Mexican and Latin American poor and those who work with them.

##### ***Section 04 The Ghana Experience***

This is a two week experiential course in Ghana, West Africa, which features concentrated study, lectures, and interactions with the people of Ghana. The course involves an in-depth examination of global, social, and economic issues of development; and explores the agencies, elements, and patterns of responses used to address hunger, health care, education and other issues impacting the people of developing countries.

##### ***Section 05 Resources and Distributive Justice Issues in India***

This three-week international immersion courses occurs in Mumbai and Dahanu, India. The program is divided into two settings, urban and rural. In approximately half the course, students will study urban issues through lectures and fieldwork in Mumbai. In the second half of the course, students will examine rural issues in the same format in Dahanu. The program content includes Indian political, social and economic history and current social and environmental issues. Fieldwork in both settings provides students with practical hands-on experience.

##### ***SWRK 704 Spirituality in Clinical and Healthcare Practice***

This course provides a framework for examining religious experience within the context of social work values. The purpose is to develop knowledge and skills for spiritually sensitive clinical and/or healthcare practices. Students have the opportunity to reflect upon their personal beliefs and values and integrate these experiences into their professional practice in ways that are responsible, sensitive and competent. Models of spiritually sensitive practice are developed and critiqued.



**SWRK 705 Social Work Practice in an International Context**

This course is designed to provide students with a working foundation for social work practice in an international context. This course exposes students to international practice situations and current social issues that affect many developing countries, including poverty, civil conflict and communicable diseases. A variety of conceptual frameworks and theories are applied to current and new strategy options to provide students with the beginning skills to assess the needs of poor communities and the outcome effectiveness of programs using an international perspective. Special attention is paid to cultural diversity and social justice expectations in these environments.

**SWRK 707 Policy Practice for Social Justice**

In this course, students will gain leadership skills to effectively advocate for social policy and economic justice. Course content will prepare students to use a range of tools and skills to effectively change or enhance societal structures. Social work skills in policy practice with oppressed and vulnerable groups will be explored in the student's area of concentration.

**SWRK 711 Social Work and the Law**

This course is an overview of the U.S. legal system and how the law impacts social work practice at different levels and in a variety of settings. The course includes content on legal issues related to competency, non-profit management, criminal justice, and family matters.

**SWRK 715 Practice with Families and Communities Experiencing Poverty**

This course is designed to examine the needs of families and communities of all sizes that are struggling with poverty. A variety of poverty reduction models are examined to develop an understanding of multilevel assessment and practice interventions focused on empowering families and communities. Patterns of social and economic injustices that result in the inequitable distribution of resources and opportunities are also examined.

**SWRK 716 Diversity and Anti-Oppression Practice**

This course focuses on human diversity within and between groups and anti-oppression interventions in social work practice. The content includes perspectives on discrimination and oppression based on race, gender, class, age, sexual orientation, ethnicity, mental and physical disability, and/or spiritual orientation. Course addresses how group membership affects access to resources, services and opportunities and relates to risk factors for specific population groups.

**SWRK 717 Foundations of Nonviolent Peacemaking**

This seminar course focuses on essential knowledge and skills necessary to engage in the peacemaking process. Students explore and analyze their own understanding of the concepts of peace and conflict and examine the role of peacemaking in light of those understandings. Models for peacemaking are examined. Practical skills associated with the peacemaking process including conflict mediation/resolution and reconciliation are discussed.

**SWRK 718 Care of the Elderly: A Multi-Disciplinary Approach to Health**

This course focuses on physiological, psychological, socio-cultural, spiritual, ethical, and political/legal theoretical basis for care of the elderly. It is an online course. Taught by Nursing, NURS 575-20.

**SWRK 720 School Social Work**

This course provides the student with the basic knowledge and skills needed by the school social worker. Content includes the historical development of school social work; education and special education laws and mandates; school social work processes including referrals and assessments; and the social work roles of clinician, broker, advocate, educator, consultant and researcher in the school.

**SWRK 721 Community Theory and Practice**

In this course, students gain advanced knowledge and skills for community practice. Course content focuses on theories of community and social systems as well as practice theories emphasizing social change, empowerment, and promotion of social and economic justice for culturally diverse and at-risk communities. The roles of community organizer, community developer, and social planner are emphasized in this course.

**SWRK 725 Human Behavior and the Social Environment**

This course is an introduction to theories, knowledge, and perspectives which explain the behavior of individuals and social systems. The theories are the basis of social work practice.

**SWRK 729 Social Work Practice in Corrections**

This course presents the issues and trends within adult and juvenile corrections. This course will assess adult and juvenile correctional systems, including jails and prisons, probation, parole, and alternatives to incarceration. Treatment of substance abuse, health problems, and mental illness are examined within the context of correctional settings and offender populations.

**SWRK 734 Health and Human Behavior**

This course explores theories of human behavior as it relates to health, illness, disability, diversity, and environmental factors.

**SWRK 735 Complementary Approaches to Healing in Social Work Practice**

This course introduces the student to alternative and complementary schools of thought in medicine, including allopathic, anthroposophic, ayurvedic, Chinese, chiropractic, homeopathic, naturopathic, and osteopathic approaches to healing.

**SWRK 737 Organizational Theory and Leadership**

In this course, students develop an understanding of theories of organization and leadership as applied to human service organizations. Students examine the theories most commonly used for understanding and leading human service organizations. Particular attention is given to understanding the dynamic environment within which social work and other human service leaders operate.

**SWRK 739 Seminar in Communicating with Children**

This course focuses on an examination of the unique ways in which children communicate thoughts, feelings, aspirations, and conflicts, and a presentation of the modes used to communicate with children. Various methods of communication will be analyzed in terms of their differential effectiveness for dealing with normal and disturbed children at various developmental levels in a range of settings including families, peer groups, schools, therapy groups, and other institutions.

**SWRK 741 Family Interaction Under Stress**

This course examines the contemporary U.S. family as one of the major social institutions and as a social system. A range of theoretical perspectives are presented as analytical tools for exploring the nature of family interaction under stress. Emphasis is placed on systems. This course examines the contemporary U.S. family as a major societal institution and social system. A range of theoretical models is presented as analytical tools for probing the nature of family interaction under stress. Emphasis is placed on the interactional, systems, and life cycle perspectives as comprising a comprehensive theoretical framework for understanding the types of stresses encountered by families over time and the attempts by family members to cope with these stresses.

**SWRK 742 Social Work Practice in Mental Health**

This course provides a human behavior and practice context for the delivery of social work services in the health systems continuum concerned primarily with mental health. Particular attention will be given to the interaction of the mental health institutions and cultural norms, definitions of deviance and illness, the medicalization of social interventions, social policy and the funding of mental health services, and the ability of social workers to deliver clinical services to the mentally ill.

**SWRK 743 Community Mental Health Practice with Adults Diagnosed with Serious Psychiatric Disabilities**

This course will provide an analysis of community mental health practices and interventions with adults diagnosed with serious and persistent psychiatric disabilities. Particular attention will be given to recovery-oriented practice in the areas of employment, housing, family psycho-education, wellness management, medications and integrated substance abuse treatment. The course will focus on current treatment models such as intensive case management and assertive community treatment, functional assessment and strengths-based treatment planning.

**SWRK 744 Substance Abuse Interventions**

The overall goal of the course is to increase student knowledge about alcohol and drug abuse/dependency and the recovery process. This course surveys the theoretical, practice, policy, and research literature that deal with the etiology, dynamics, treatment, and prevention of substance use disorders in contemporary U.S. society. The view conveyed in this course is that substance use and abuse, its causes, its effects, and its remedies are extremely broad, systemic, multi-level, and multivariate.

**SWRK 745 Health and Mental Health Interventions with Older Adults**

This course explores skills and competencies needed to effectively work with older adults and their families. It provides an overview of health and mental health issues with an emphasis on holistic and systemic assessments and social work practice interventions. The environmental, psychosocial, biological and spiritual influences on health and mental health are highlighted. Clinical, programmatic and policy interventions known to promote healthy behaviors are discussed. Attention is paid to social justice, ethics and the law, particularly as it relates to economic deprivation and oppression leading to the inequitable distribution of health services to older adults.

**SWRK 750 Social Work Practice with Individuals, Families, and Groups**

This course prepares students to apply a generalist perspective and systems framework to direct social work practice with individuals, families, and groups. This course emphasizes the basics of communication, interviewing, relationship building, and professional use of self, skills essential to effective social work assessment, intervention and evaluation. Theories and practice skills related to social work with individuals, families, and groups will be the primary focus.

**SWRK 751 Social Work Practice with Communities and Organizations**

This course prepares student to apply a generalist perspective and systems framework to social work practice with communities and organizations as well as task/problem-solving groups within larger systems and settings.

**SWRK 753 Social Work Practice with Groups**

This course provides the student with in-depth exploration of group theory and practice. It offers the opportunity to experience the process through structured experiences designed to teach the key processes and skills required of therapists or facilitators in group work.

**SWRK 754 Divorce Mediation**

This course will prepare social work students to provide divorce mediation based on the core social work value of client self-determination. Students will learn interest-based negotiation theory and skills of divorce mediation for use in social work practice. This course discusses the basics of family law including equitable property division, parenting responsibility and distribution of financial responsibility.

**SWRK 755 Social Work Practice in the Health Field**

This course provides the framework for social work practice in the health care field. This course will cover the array of social work practice approaches and nature of interdisciplinary practice in various health settings such as clinics, hospice, skilled nursing care, and hospitals.

**SWRK 757 Foundations of Family Practice**

This course involves a survey of the family practice field in its epistemology, cultural influences, and models of practice. The course strives to integrate theoretical ideas into an understanding of practice applications, including methods and techniques. Students will integrate the general systems approach with family practice models in social work settings. Content will include both historical and present-day family practice models.

**SWRK 760 Behavioral Interventions with Children and Adolescents**

Using a systems framework, viewing the child in environment, this course teaches students behavioral learning theories for work with children who have a wide range of challenging behaviors. These practice skills are essential for working with children in schools, residential treatment, juvenile justice system, foster care, outpatient psychiatric case management, etc. Students will

learn to educate, consult, and collaborate with families and/or caregivers in the use of these methods.

**SWRK 761 Social Work Practice with the African-American Family**

This course will present a multi-systems approach to family therapy and social policy that enables the social work practitioner and policy maker to systematize and implement treatment plans at the nuclear- and extended-families levels and policies at the family and systems levels. It presents a model that advocates culturally sensitive social work practice based on the premise that the African-American experience is a social and cultural subsystem of the larger American experience.

**SWRK 762 Clinical Diagnosis and Social Work Practice**

This course covers the background and basis of clinical diagnosis and use in social work practice. Students will gain further knowledge on assessment and use of the DSM IV-TR.

**SWRK 763 Loss, Grief, and Healing**

This course explores the process and stages of loss and change as well as the counseling implications for social workers. Topics include the impact of losses and changes resulting from material loss, relationship loss, intrapsychic loss, functional loss, role loss and systemic loss.

**SWRK 764 Children and Families in the Social Service System**

This course provides social work knowledge and skills directed toward helping children and families involved with social service systems due to child abuse and neglect and other risk factors. The course will address issues of abuse, neglect, foster care, adoption, family treatment models, and case management.

**SWRK 765 Administrative and Clinical Supervision**

This course provides an overview of models and specific skills used in administrative and clinical supervision including consultation, negotiation, and conflict management.

Interactional and structural theoretical perspectives are introduced to inform the framework for administrative and clinical supervision. Students learn about agency policy, practice, ethical, legal, and political dimensions of supervision. Students also gain knowledge of the supervisor's leadership role in representing and illustrating the objectives of the social work profession that interact with these dimensions. Emphasis is given to supervision with minority and oppressed populations.

**SWRK 767 Crisis Intervention with Individuals and Communities**

This course is designed to present practice models for crisis intervention at all three levels of practice: the individual, the family, and the community. Content is both specific and general in providing models of intervention for diverse practice settings. In this course, crisis is defined as any reaction to an unexpected event that is perceived by the person as being life threatening, resulting in serious physical, psychosocial, and spiritual disequilibria that overwhelms that person's ability to cope.

**SWRK 769 Marital/Couples Counseling**

This is an introductory theory and skill development in course in marital and couples counseling. The focus is on developmental and on-going marital and couples relationship challenges.

**SWRK 770 Contemporary Interventions in Health and Mental Health**

This course provides basic knowledge and skills of contemporary interventions in health and mental health interventions.

**SWRK 771 Intimate Partner Violence: Contemporary Strategies for Social Work Practice**

The focus of the course is on ways to reduce the incidence and impact of intimate partner violence. Students address and examine the theoretical understandings for violence against women and other intimate partner violence as well as the need for direct services, community organizing, and public policy changes that will help end intimate partner violence.

**SWRK 772 Cognitive-Behavior Therapy for Social Work Practice**

Students in this course will learn basic knowledge and skills of cognitive-behavior therapy as they relate to stage-appropriate assessment and treatment of persons with co-occurring mental illness and substance use issues. These

skills will include developing a therapeutic alliance, problem formulation, assessment of maladaptive thoughts and schemas, cognitive restructuring, exposure therapy, development of various coping skills and relapse prevention. Students will learn how to integrate other treatment approaches such as harm reduction, motivational interviewing, and mindfulness with cognitive-behavioral approaches in order to assist people to achieve and maintain therapeutic goals.

#### **SWRK 776 Qualitative Research Methodology**

This course focuses on three areas: 1) Assumptions and issues involved in qualitative research in social work, 2) political and ethical implications, and 3) research designs and methodological procedures. Project required. All students will be expected to do an applied research project related to their area of concentration. It is recommended that this course be taken concurrently with a concentration practicum in order to facilitate the research project.

#### **SWRK 777: Classic Approaches to Family Practice**

This course is designed to develop knowledge, understanding, and skills related to, and the ability to think critically about, classic approaches to family practice from a social work perspective. An examination of a modernist orientation as well as the basic philosophical/theoretical assumptions underlying several classic approaches and the practice principles that have evolved from them is offered. Students are introduced to both seminal sources and current applications of five of the following approaches to family practice: psychodynamic, natural systems theory, experiential, structural, communications, strategic, and behavioral/cognitive. An important aspect of the course is a consideration of the ramifications for social justice and other social work values and ethics of a modernist stance.

#### **SWRK 783 Assessment and Measurement in Clinical Social Work Practice**

The theory and practice of clinical work is focusing increasingly on the efficient and effective attainment of relevant and feasible goals and outcomes. Critical to this end is the development of a holistic and accurate bio-psycho-social-cultural assessment. This course focuses on this time-honored process of assessment. It updates it with a strong emphasis on measurement based on both quantitative and qualitative procedures that ground the social work assessment in empirical observations.

#### **SWRK 784 Evaluating Human Service Programs**

This course focuses on conceptual and methodological approaches to evaluation of programs and policies. All students will be expected to do an applied research project related to their area of concentration.

#### **SWRK 785 Organizational Planning and Programming**

In this course, students develop the basic conceptual and methodological principles and skills necessary for planning practice in human service organizations. Students examine strategic and operational planning within the context of a human service organization. They acquire a critical perspective on and appreciation for the interconnectedness of organization and environment, needs or social problems, and programmatic response. Particular attention is given to the essential elements of designing a response to be used in requests for proposals and grant applications.

#### **SWRK 786 End of Life Care and Social Work Practice on an Interprofessional Team**

This course prepares students to work with clients who are experiencing a life threatening illness. Students will explore physical, psychological, spiritual, emotional and sociocultural concerns typically encountered by clients and families confronted with a terminal illness. Emphasis will be given to the significance of the interprofessional approach to providing this kind of care with a focus on the professions of social work and nursing.

#### **SWRK 787 Research Methods for Social Work Practice I**

This course is designed to equip social work students with the knowledge and skills to engage in effective research at the programmatic, policy, and direct levels of practice. It is the first in a 2 course sequence. Research Methods I focuses on students becoming not only effective consumers of research literature but also understanding the fundamentals of empirical research. The course accentuates the application of optimal methodologies and techniques necessary to examine the impact of services with clients, to assess the effectiveness and efficiency of human service programs and to investigate the

efficacy of social and public policies. It focuses on conceptualizing and designing an applied research project culminating in a research proposal.

#### **SWRK 788 Research Methods for Social Work Practice II**

This course is designed to equip social work students with the knowledge and skills to engage in effective research at the programmatic, policy, and direct levels of practice. It is the second in a 2 course sequence. Research Methods II focuses on executing the fundamentals of empirical research. It nurtures the students' ability to evaluate social work services, human service programs and/ or social and public policies in order to improve them. The course accentuates the application of optimal methodologies and techniques necessary to examine the impact of services with clients, to assess the effectiveness and efficiency of human service programs and to investigate the efficacy of social and public policies. Students should emerge from the course able to execute an applied research project including refining a research study; collecting, managing, analyzing data; and report writing. The course culminates in a completed research project.

#### **SWRK 790 Feminist Approaches to Social Work Practice: Not for Women Only**

The course is designed to clarify feminist issues and to illustrate how a feminist perspective in social work practice can facilitate individual and social change. Characteristics, values, techniques and areas of feminist practice are explored and distinguished from other theoretical models.

#### **SWRK 791 Pharmacology and Social Work Practice**

This course introduces students to the mechanisms of action, side effects, major drug interactions, and therapeutic uses of major classes of drugs. The role of social workers in medication management will also be addressed, particularly the skills needed to effectively collaborate with clients, families, and other health providers on medication-related issues. Special consideration will be given to the medication needs of special populations, including persons with mental illness, children, pregnant women, elderly persons and racial/ethnic minorities, as well as prescription drug abuse, over-the-counter medications and herbal remedies.

#### **SWRK 798 Nonprofit Management**

This course examines the roles of the nonprofit sector and nonprofit organizations in contemporary society. The role of nonprofit organizations as vehicles for citizen participation and as commercial enterprises will be highlighted. The challenges facing nonprofit organizations in contemporary society will also be analyzed.

#### **SWRK 799 Social Entrepreneurship**

This course introduces students to the concept and practice of social entrepreneurship. It reviews the historic and contemporary approaches to and models of social entrepreneurship. It explores the range of issues and challenges associated with social entrepreneurship. Particular attention will be given to microenterprise, venture philanthropy, social venture capitalism, social return on investment and business planning for social enterprises.

#### **SWRK 808 Social Work, Education and Individuals with Exceptionality**

This course provides the student with a working knowledge of the learning, psychological, cognitive and social characteristics of youth and children with exceptionality. Current methods of practice within the educational setting, interventions, strategies, and modifications for use within the general education classroom are examined.

#### **SWRK 809 Sex Therapy in Clinical Practice**

This course deals with assessing and treating the sexual problems most commonly presented by individuals and couples, including disorders of desire, aversion, orgasm, and pain. The principles of sex therapy will be covered from a social constructionist and systems perspective, taking into account history, context, meaning, and relational components. Foundational and contemporary theories of sex therapy will be covered.

**SWRK 810-04 Urban Ecology: Communities and Neighborhoods**

(Cross-listed with Public Policy Studies PPS I420-04)

Ecology is the study of the relationships of species to environments. Human ecology is the study of the characteristics of spatially defined communities and the spatial arrangements of land uses within these spatially defined communities. This approach arose at the University of Chicago during the early part of the 20<sup>th</sup> Century and enjoyed great popularity in academic circles up until the 1950's. This course will explore the methods and theories that contribute to our ecological understanding of urban neighborhoods and communities.

**SWRK 811 The Census and Neighborhood Analysis**

(Cross-listed with Public Policy Studies PPS I426-01)

This course involves an examination of the analytical approaches to communities and neighborhoods utilizing census and other socio-demographic data.

**SWRK 812 Introduction to Geographical Information Systems**

(Cross-listed with Public Policy Studies PPS I435-06)

This course is designed to provide an overview of the conceptual, technical, and procedural aspects of Geographic Information Systems (GIS).

**SWRK 813 Issues in Public Administration**

(Cross-listed with Public Policy Studies PPS I503-01)

This course examines the role of public administration in the U.S., including its historic evolution and current issues such as privatization, quotas, affirmative action, and whistle-blowing.

**SWRK 814 Urban Economic Development**

(Cross-listed with Public Policy Studies PPS I510-01)

This course examines factors determining business, industrial, and commercial location, techniques used in analyzing metropolitan growth, and methods used by industrial development organizations to attract business firms.

**SWRK 815 Introduction to Public Sector Budgeting**

(Cross-listed with Public Policy Studies PPS I512-01)

This course deals with the economic and political aspects of public budgeting at all levels of government. It features an in-class budget simulation.

**SWRK 819 Foundation Integrative Seminar**

This seminar is designed to provide opportunities for students to integrate foundation and a generalist perspective of social work theories, methods, values, and ethics with practicum experiences. Additionally the seminar will focus on maximizing learning experiences in the student's practicum and in gaining knowledge of other target populations and social service settings. Students will gain skills in peer consultation and support, case presentation, researching for practice-based literature, and in approaching various practicum challenges.

**SWRK 820 Concentration Integrative Seminar**

This seminar provides an opportunity for students in the first Concentration Practicum SWRK 822 Practicum II, to integrate theoretical constructs and information gained in the classroom with the application of social work practice. The seminars are designed to provide additional integration of coursework and daily practice; enhance a student's knowledge and skill base through peer sharing; and provide a supportive opportunity for students to debrief on practice challenges.

**SWRK 821 Foundation Practicum I**

The foundation practicum requires students to have a generalist perspective social work experience with micro, mezzo, and macro activities.

**SWRK 822 Concentration Practicum II**

Students will learn to integrate knowledge, values, and skills to develop a professional level of practice with specific emphasis on their area of concentration.

**SWRK 823 Concentration Practicum III**

Students will continue to build on their knowledge, values, and skills to develop a professional level of practice with specific emphasis on their area of concentration.

**SWRK 824 Concentration Practicum IV**

Students will continue to build on their knowledge, values, and skills to develop a professional level of practice with specific emphasis on their area of concentration.

**SWRK 825 Elective Practicum V**

This elective provides additional practicum experience in an area of special interest to the student.

**SWRK 828 Fundraising for Non Profit Organizations**

This course focuses on the cycle, stages and progression of fund development for formal, nonprofit organizations and grassroots associations. It introduces the concept of advancement, development, relationships and cultivation for nonprofit organizations. It emphasizes the importance of developing relationships within and matched to the stages and activities of institutional advancement and development.

**SWRK 829 Postmodern Approaches to Family Practice**

This course is designed to develop knowledge and understanding of, skills related to, and the ability to think critically about postmodern approaches to family practice from a social work perspective. An examination of the basic philosophical/theoretical assumptions underlying several postmodern approaches and the practice principles that have evolved from them is offered. Students are introduced to some of the seminal sources relative to postmodern thinking in addition to those describing the following approaches to family practice: the reflecting team; solution-oriented-therapy; solution-focused therapy; narrative therapy; and therapeutic conversations. An important aspect of the course is a consideration of the ramifications for social justice and other social work values and ethics of a postmodern stance.

**SWRK 898 Independent Study**

This offers students the opportunity for individual and independent study of a particular area related to social work theory or practice. Prior approvals are required by the student's advisor, Director of MSW program, and faculty member directing and evaluating the study are required. See "Independent Study Courses" below for details.

## Graduate Offerings in the Center for Sustainability

**Diana Carlin, Ph.D.,**

*Executive Director*

Sustainability is focused on meeting the needs of society today, while enabling future generations to thrive. This implied focus on service to others embeds sustainability roots deep within the Saint Louis University mission.

### History

The Center for Sustainability at Saint Louis University was launched in 2010 as the first degree granting Center outside of the Medical School, and a "hub" for the pursuit of sustainability related research at SLU. Since the Center

opened its doors in 2010, it has received over \$7 million dollars in direct grants. The center has also provided over \$200,000 in grants to collaborating faculty to pursue innovative research in Earth & Atmospheric Sciences, Dietetics & Nutrition, Biology and Chemistry.

### Program Overview

The Master of Sustainability degree program was developed through a unique collaboration between the College of Arts & Sciences, the John Cook School of Business, the Parks College of Engineering, Aviation and Technology and the College of Education and Public Service. The Master of Sustainability degree program trains leaders to understand the cascading issues surrounding society's increasing use of our decreasing resources. The cross-disciplinary degree integrates knowledge on sustainable business practices, effective social and policy processes as well as innovative design and engineering approaches. Consistent with Saint Louis University's Mission, candidates will learn applied ethical reasoning skills as the foundation for achieving sustainability. As the Green Economy continues its explosive growth, graduates with a Master of Sustainability degree from SLU's Center for Sustainability will be well-positioned for enhanced career opportunities in nearly every sector and industry for years to come.

## Master of Sustainability

**David Webb**

*Program Manager*

### Program Framework and Objectives

The goal of the Master of Sustainability program is to provide an integrated learning environment that emphasizes sustainability as a unique discipline. To meet that end, the program works within the following framework and related program level objectives:

*Holistic...*The program is interdisciplinary and focused on whole systems.

*Humanistic...*The program embodies the principles of service and justice found in the university mission statement.

*Collaborative...*The program recognizes that individuals must work together to address complex problems.

*Applied...*The program focuses on the application of knowledge to address real world problems.

### Requirements

The Master of Sustainability degree requires 30 credit hours to complete, including up to nine credit hours dedicated to Reality-based, Efficient Action Learning, or REAL Projects. Within the 30 credit hours, up to 9 credit hours may be comprised of approved coursework at the 400 level. Courses are offered in the evenings and on weekends. Select courses integrate virtual methodologies with traditional classroom contact hours, effectively reducing the program's total carbon footprint.

### Career Options

Career opportunities for individuals with sustainability related skills continue to grow and the green job market is paced to outperform all other sectors between now and 2016.

Since its launch in 2010, the Center for Sustainability has become a key stakeholder in economic growth initiatives focused on sustainable development. Our REAL Partners Program gives students an opportunity to work directly with local organizations to apply knowledge acquired in the classroom toward solving "REAL-world" sustainability-related challenges. Through practitioner-oriented course work, students not only develop practical, hands-on skills, but also build relationships with sustainability leaders throughout the community.

Armed with the skills and knowledge developed through the Master of Sustainability program, successful graduates will have a distinct advantage when pursuing careers across multiple sectors, including energy, manufacturing, building, public administration, health care, and private enterprises. Alternative career path opportunities with sustainability-related not-for-profits and non-governmental organizations will also be available to our graduates.

### Degree Plan

Each Master of Sustainability candidate works in close consultation with the Center for Sustainability's faculty and staff to craft a customized Sustainability Ratio Studiorum, or plan of study. The Ratio process is designed to ensure that program level objectives are achieved and that candidates advance their career and life interests. Candidates' individual plans of study will include the core courses listed below, plus 12 credit hours assembled from the program's approved pool of electives and seminars.

### COURSE DESCRIPTIONS

#### Core Courses

#### **MOS.502 Sustainability Foundations (3)**

This course establishes the critical connections between those separate but important understandings of sustainability, defining the movement from an integrated, systems-based perspective. Students will develop a basic understanding of how critical concepts from social work, business, engineering, public policy and other disciplines converge when addressing the challenges that sustainability/environmental related problems pose in society. A critical component of this course will be the development of students' foundational ethical reasoning skills, enabling them to apply Saint Louis University's humanistic perspective on sustainability when contemplating issues and potential solutions

#### **MOS.505 Sustainable Business Practices (3)**

In today's complex business environment, organizations are constantly challenged to develop and execute innovative policies, processes and activities that insure profitable growth. This course explores methods for organizations to pursue economic development while protecting the environment. Operational topics such as measuring environmental foot prints, the emergence of eco-technologies and greening of the supply chain are explored within a local and global context.

#### **MOS.506 Environmental Aspects of Sustainability (3)**

A minimum requirement for humans to survive is access to 1) air to breathe, 2) water to drink, and 3) food to eat. Without these three essentials, humans die. The course is structured around three essential ingredients of life. We will

start off with water-related issues in part because there are two optional water-related field trips in September in which you can participate. We will then learn about groundwater and soils, which is the foundation of most food production. And then we will spend one week covering the topic of clean air.

### **MOS.510 Engineering a Sustainable World (3)**

This course provides an overview of sustainability from the perspective of various engineering disciplines. It begins by introducing the general concept of sustainability in engineering and then introduces sustainability related concepts across several engineering disciplines, including civil, electrical, energy, environmental, manufacturing, mechanical, and others.

### **MOS.511 Sustainability in Society and Cultures (3)**

In this course we explore policy questions at the global, national, and local scale, developing a well-rounded understanding of terms and concepts used to describe sustainable development. With this broader understanding students will be able to more fully appreciate universal conflicts that are present in the classic environment/economy debate.

### **MOS.585 Sustainability Capstone/Field Practicum (3)**

Students choose from a menu of REAL (“Reality-Based Efficient Action Learning”) projects that require the integration of knowledge acquired during the core Master of Sustainability courses. The specifics of each REAL project varies based on student career interests, and can include initiatives with regional, national and global partner organizations (REAL projects abroad require that student cover travel costs).

### **Electives and Seminars**

Upon successful completion of the core courses, students work with an academic advisor to customize a plan of study that fulfills the remaining 12 credit hours required for the degree. Students may choose from a pool of electives or one credit hour seminars (*subject to availability and approval*). Additionally, students may take courses that have been cross-listed with collaborating colleges, including the schools of Public Policy, Social Work, Engineering, and Business.

### **Electives (as of October 1, 2011)**

#### **MOS 503.Field Solutions (3)**

This practitioner-oriented course provides students with the opportunity to gain experience working on sustainability issues in the field. Designed to help students integrate theory and practice, develop social and career skills, foster a sense of civic empowerment, and provide collective action and workplace experience.

#### **MOS 512.Strategy for Sustainable Development (3)**

Leaders in any sector must develop a sound, long-term strategy built on establishing a unique competitive position in the market. This course reviews how sustainability principles, models, and processes are now being viewed as the bridge linking efficient operations with unique strategic positioning.

#### **MOS.515 Sustainable Development for Entrepreneurs and Small- to Medium-sized Enterprises (3)**

Entrepreneurs and small/medium sized enterprises (SME's) face unique challenges as they progress through the various organizational life cycle stages. This course identifies sustainable development processes, practices and behavior that can serve to overcome growth barriers in each stage of the organization's life cycle.

#### **MOS.516 Environmental Politics and Policy (3)**

This course examines the politics and processes of U.S. environmental policy-making. Topics include: why government makes environmental laws; competing values influencing environmental policy; institutions, processes, and political actors that shape the creation and implementation of environmental laws; how government addresses environmental problems; how American actions influence international attempts to address environmental problems

#### **MOS.520 Sustainability in Health Care (3)**

Sustainability related issues such as water scarcity, greenhouse gas emissions and species extinction exacerbate the already urgent need to deliver health care services, particularly to underserved populations. Additionally, health care facilities themselves contribute disproportionately to the waste stream, while consuming significant energy through their daily operations. This course applies a sustainability lens to regional, national and global health care

systems, a critical consideration in SLU's humanistic approach to sustainability.

### **MOS.593 Special Topics (3)**

Special topics are one-time courses on a particular topic or trial courses that are expected to become a standard course with their own unique course numbers.

### **MOS.596 Master's Project (1-3)**

Theoretical or practical field work that leads to a project report and defense of the Project.

### **MOS.597 Research Topics (1-3)**

Theoretical or practical field work that is not part of a thesis or master's project.

### **MOS.598 Independent Study (1-3)**

Independent study is a non-classroom course in which a student explores a topic that is related to the student's graduate work and career goals.

### **Seminars (as of October 1, 2011)**

#### **MOS.530 Sustainability Economics (1)**

This seminar discusses the economic foundations needed to address the multidisciplinary issues related to environmental resource management encountered by all sectors and levels of society (individuals, corporations, government organizations, non-government organizations, etc.). The course will equip students with the knowledge and tools to estimate monetary values of environmental resources and introduce techniques to estimate values of ecosystem services.

#### **MOS.531 Economic Modeling and Analysis in Sustainable Development (1)**

This seminar introduces students to the tools and techniques used to estimate the dollar value of ecosystem services and perform cost/benefit analyses. These tools help policy makers and sustainability professionals better understand and quantify the values and issues related to our environmental resources so that they may efficiently allocate resources of sustainability initiatives. Software-based analytical tools such as ARIES, InVEST, SAS, STATA, IMPLAN, and GIS are reviewed.

#### **MOS.532 Sustainable Food Systems (1)**

This course examines topics related to food production and distribution. Topics include sustainable agriculture, community gardens, food deserts, and the slow food movement.

#### **MOS.533 Information Communication Technologies and Sustainability (1)**

This course examines the use of information communication technology (ICT) and its uses for sustainable practices. The course explores the technologies and virtual spaces that advance sustainability across a number of venues. Social media, virtual technologies and other topics will be addressed in this seminar.

#### **MOS.535 Public Policy in Sustainable Development (1)**

This course will explore complex policy and public management issues at the state and local level. Students will understand important environmental policies and management practices. Students will acquire tools in policy analysis and public management to develop solutions to address environmental problems. The course will emphasize leadership, collaboration and conflict resolution.

#### **MOS.536 Certifying Sustainability (1)**

Certification implies the application of a rubric for assessment to activities that can be measured. Certification standards in sustainability related endeavors is considered critical to enabling continuous process improvement in such areas as building, carbon emissions (e.g., for proposed cap and trade), and other important activities. This course reviews the growing sustainability certifications, as well as their discreet value propositions.

#### **MOS.540 Sustainable Development Project Management (1)**

This seminar explores basic project management principles adapted for sustainability related projects, e.g., built environment, poverty alleviation, waste remediation, etc. Students learn broad-based project management skills

that can be applied across sectors and industries. Management of individual household/lifestyle changes is also considered.

#### **MOS.541 Sustainability in the Built Environment (1)**

This seminar primarily reviews sustainability processes and practices employed throughout the built environment. Concepts from building certification programs like LEED (Leadership in Energy & Environmental design) are presented and discussed.

#### **MOS.542 Triple Bottom Line (1)**

The triple bottom line refers to the value an organization receives by integrating economic, environmental and social objectives within their strategic management decisions. This seminar compares/contrasts the triple bottom line approach with the more traditional profit maximization business model i.e., an approach focused solely on economic returns to shareholders.

#### **MOS.543 Cradle to Cradle Sustainability (1)**

The goal of Cradle to Cradle development is to create new products and services so that they actually have a positive impact on the environment and social equity, while still returning a reasonable return on investment to the developers. This course looks at examples of cradle to cradle design where, for example, a building produces more energy that it consumes.

#### **MOS.544 Sustainability Matters: Energy (1)**

This seminar explores the science, engineering, and business of energy to promote regional sustainability through education, awareness and collaboration with local companies. It discusses local solutions that organizations can use to grow in a more sustainable manner. Local community leaders will share insights and experiences.

#### **MOS.545 Sustainability Matters: Water (1)**

This seminar addresses the critical issue of water conservation as a pressing, global challenge for the future. The seminar provides a global and regional perspective on water-related issues, the challenges faced, and ways in which individuals can get involved as agents for change. Local community leaders will share insights and experiences.

#### **MOS.546 Sustainability Matters: Green Economy (1)**

This seminar explores sustainability from a personal to organizational level and how local businesses can build a better environment for their organizations as well as the St. Louis region. Topics covered include: sustainability philosophy, ethics, and behavior at the individual level; forming "green" teams; strategic planning and goal setting for the organization; the impact of green initiatives on business practices; threats, challenges and public policies encountered in going green; economic benefits of sustainability programs; and the future of local sustainability.

#### **MOS.547 Sustainability Matters Climate Change (1)**

Climate change has been the subject of some controversy in recent years. This course looks at the facts about climate change, as well as the significant efforts underway to solve global warming and the potentially catastrophic impact it to the planet.

#### **MOS.548 Sustainability Analytic Tools and Metrics (1)**

Statistical analysis is a critical foundation for decision making in any field. With regard to sustainability related issues, the tools and metrics employed take on extra importance because of the potential for long term, irreversible impact on the environment from certain economic development activities. This course reviews methods for understanding and analyzing the volumes of research data related to sustainability challenges facing the world.

## Graduate Offerings in Parks College of Engineering, Aviation, and Technology

**K. Ravindra, Ph.D., P.E.,**

*Interim Collegiate Dean*

**Phil Ligrani, Ph.D.**

*Graduate Programs Director*

Consistent with the mission of Saint Louis University, the mission of Parks College is to prepare students to advance the frontiers of knowledge and technical expertise in engineering and aviation while instilling within them good ethical and professional character.

### **History**

Oliver L. Parks founded Parks College, the first federally certified school of aviation in the United States, in 1927 in Cahokia, Illinois. After establishing a strong aviation program, the school's founder entrusted his legacy to Saint Louis University in 1947. Now, Parks College offers a variety of engineering and aviation programs at the undergraduate and graduate levels.

### **Program Objectives**

The graduate program emphasizes quantitative extension of knowledge in the core area of engineering and aviation with additional specialization tailored to the interests of the graduate student.

The program emphasizes familiarization with the methods and techniques of scientific investigation through research, evaluation of knowledge in an independent and critical fashion, and communication of knowledge, through written and oral means. The program is designed to advance the careers of working engineers, as well as provide graduate education to students at the Master of Science and Ph.D. degree levels.

## Master of Science

### **Required Courses**

The College offers a Master of Science degree in engineering and a Master of Science degree in aviation with three options: a. courses only option, b. project option, c. thesis option.

The minimum requirement for all Master of Science degrees in engineering is 30 credit hours, including up to nine credit hours for thesis research or a project. Faculty advisors may tailor individual curriculum to satisfy the research goals of the students. Industry professionals may complete a course only degree, with 30 credit hours of course work. Up to 9 credit hours may be comprised of coursework at the 400 level. The remaining course work credits must be at the 500 or 600 level.

The Master of Science in aviation requires a total of 32 credit hours, and research faculty will want their students to take specific courses that support their thesis research. The variable credit hour requirements for thesis or project allows flexibility in meeting the needs of students with a variety of backgrounds. The traditional model for a research Master of Science degree includes 6-9 credit hours of thesis research.

Within these minimum requirements, individual faculty advisors may impose additional requirements or specific course requirements.

## Degree Plan

Each new graduate student writes a Program of Study that must be approved by the faculty advisor and the Graduate Programs Director. That document will be prepared and reviewed in the context of the student's background and the student's career goals. In that flexible approach, each student will determine, with faculty advice and approval, a unique set of courses and a specific plan for the thesis or project. This approach can accommodate students who want to continue for a Ph.D. degree, students who want to go into industry with a M.S. degree, and students who want to integrate other areas into their degrees - areas like business, the basic sciences, or other areas that fit into the student's individual career plans. The number of allowed transfer credit hours to the Master of Science graduate program is limited to 12 credit hours. The transfer credit hours must be approved by the faculty mentor and the Graduate Programs Director to determine the quality and relevance of graduate courses taken elsewhere. Significant changes in the degree plan, as indicated on the Program of Study form, requires approval of the student's faculty advisor and the Graduate Programs Director.

## Research

Students who are research oriented, and may continue for a Ph.D. degree, will undertake thesis research for 6-9 credit hours. This is the traditional option for Ph.D. students who want academic or other careers where a doctorate level degree is required. Other students will expect to enter or re-enter industry, and they will likely choose the project option, or the course only option. The project represents successfully planning, conducting, and completing an individual or team task. The nature of the project may be quite varied. It could produce a research result, a product prototype in hardware or software, or a solution to a problem in industry or academia. The project may also initiate a new line of inquiry or progress toward a new product or process. In any case, it should go beyond simply providing a learning experience; it should represent a new contribution to knowledge by the student who is working towards obtaining a Master of Science degree.

## Career Paths

The various departments within Parks College provide a stimulating environment for graduate study. Several courses are taught by working professionals, such as from the Boeing Company. Some courses are typically offered in the early evenings to facilitate working engineers to enroll in the program. Class room lectures are sometimes supplemented by guest lectures, laboratory demonstrations and field trips, as appropriate. Students are encouraged to publish the results of their thesis or project work in appropriate professional conferences and archival journals.

# Doctor of Philosophy

## Required Courses

The College offers a Ph.D. degree in engineering and a Ph.D. degree in aviation.

The doctoral degree program builds upon the Master of Science degree curriculum with additional course work focused on the research area of interest.

The engineering Ph.D. degree requires a total of 60 credit hours of course work and research activity beyond the Bachelor of Science degree, including 15-18 credit hours of dissertation research. Of the 60 credit hours, a maximum of nine credit hours may be comprised of course work at the 400 level; all other course work must be at the 500 or 600 level.

The aviation Ph.D. degree requires a total of 63 credit hours beyond the Bachelor of Science degree, including 12 credit hours of dissertation research, 15 credit hours in research methods, 9 credit hours in a secondary discipline, and 3 credit hours in graduate reading.

Those students who earn a Master of Science degree may include the Master of Science degree course credits, but not the thesis or project credits in the 60 or 63 credit hours which are required for the Ph.D. degree.

## Additional Requirements

Doctoral students are evaluated in three formal examinations. At the end of the first year of full-time doctoral study at SLU, the Qualifying Examination will assess the background of the student. After the second year, a dissertation proposal will be the basis of the Proposal Examination, which focuses on dissertation research, but also allows faculty to assess the student's abilities in research and the student's academic strengths and weaknesses. The third examination is a Dissertation Defense. Some students will enter doctoral studies with research experience and with a Master of Science degree, and the estimated timing of these three exams will be part of the initial Program of Study. The timing may be modified with approval of the faculty advisor, and the Director of Graduate Programs.

The Qualifying Examination will focus on topics related to the required courses and the student's general preparation for graduate study and research. All qualifying examinations will be arranged and administered by the associated department chair. The Qualifying Exam will normally be a written examination. The intent of this exam is to determine if the student is prepared to continue doctoral studies. The result of the exam may be a pass, no-pass, or conditional-pass. The associated department chair will report the results of the Qualifying Examination to the Graduate Programs Director. The conditional-pass will normally require that the student correct specific weaknesses, and modify the Program of Study accordingly.



A doctoral student will ordinarily develop a dissertation proposal under the supervision of the faculty advisor, and present at the Proposal Exam prior to the third year of studies. The guidance committee administers the dissertation proposal exam. The results are reported to the Graduate Program Director. On successfully completing the Proposal Exam, the student becomes a doctoral candidate.

Upon completion of the final dissertation document, a final public defense is held as a Dissertation Defense. Following the open forum seminar-style presentation, the student continues the defense in a private session with the guidance committee.

Normally, graduate students are expected to publish the results of their research with their faculty advisor. Although not a rigid requirement, Ph.D. degree candidates are expected to produce a minimum of one manuscript submitted for journal publication prior to completing their degree.

Every student entering the graduate program is assigned a faculty advisor. The student must file a proposed Program of Study normally prior to the end of the second semester of full-time doctoral study at SLU. The student's Program of Study is a schedule of academic and research work that has been carefully designed by the student in close consultation with the faculty advisor.

In regard to transfer credit hours for the Ph.D. degree, up to 30 credit hours may be transferred at the Master of Science degree level to contribute to the credit hour requirements for a Ph.D. level degree. At the post-Master of Science degree level, up to 9 credit hours may be transferred to contribute to the credit hour requirements for a Ph.D. level degree. In all three cases, the transferred credit hours and associated course work are reported on the Program of Study form, and are subject to approval by the faculty advisor, department chair, and Director of Graduate Programs.

## COURSE DESCRIPTIONS

### Graduate Courses

#### AEROSPACE ENGINEERING

Department Chair: Swami Karunamoorthy, D.Sc.

##### AENG 500: Seminar (0)

Presentations of current research by students, faculty, and guests. Registration required in the first semester. Seminar attendance expected in subsequent semesters.

##### AENG 511: Aerodynamics (3)

This course will introduce idealized aerodynamics in order to predict lift, drag, and pitching moment of airfoils and wings. A particular emphasis will be on modeling flow fields and their boundary conditions using potential flow solutions. With several group projects, the students will develop numerical tools for the analysis and design of flight vehicles. The theoretical predictions will be compared with experimental and empirical data. Prerequisites: Undergraduate Fluid Dynamics, Programming

##### AENG 513: Introduction to Computational Fluid Dynamics (3)

This course is designed to establish the fundamentals of computational fluid dynamic schemes and methods to solve the governing PDEs. The students will learn how various schemes are applied to proposed model equations, and

analyze the resulting solutions. Prerequisites: undergraduate fluid dynamics, heat transfer, and programming.

##### AENG 514: Hypersonics (3)

This course covers the history of hypersonic efforts; characteristics of hypersonic flow; slender body theory; hypersonic similitude; viscous interactions; transition to turbulence; high-temperature gas dynamics; thermal protection systems; and hypersonic propulsion systems. Prerequisites: undergraduate fluid dynamics, heat transfer, and programming.

##### AENG-515 Parachute Systems & Design (3)

This course is an introduction to the various applications, aerodynamics and design rules of parachute systems. It is intended for engineering graduate students and professional engineers. The topics include: review of current use in aviation and space; parachute configurations and components; parachute testing techniques and facilities; parachute aerodynamics and flight dynamics; parachute inflation; gliding parachutes; non-terrestrial applications; parachute system design. Prerequisites: Undergraduate Fluid Dynamics, Aerodynamics.

##### AENG-516 Unsteady Aerodynamics of Bluff Bodies (3)

This course is an introduction to the aerodynamics of non-streamlined (i.e. "bluff") bodies in both the steady and unsteady regimes. Topics include: aerodynamics of bodies in accelerated motion vs. steady motions; structure of the near and far wakes behind flat plates (in normal flows). Several examples shall be discussed in depth as well, encompassing examples from both engineering and natural worlds: 1) blimp flight and the role of apparent mass; 2) parachute under descent; 3) inflating parachutes; 4) spacecraft drag during atmospheric re-entry; 5) wake re-contact during decelerating motion 6) wave-generated drag on ocean piles; 7) engulfment drag by whales; 8) fast start by shrimp.

Prerequisites: Undergraduate Fluid Dynamics, Aerodynamics

##### AENG 518: Applied Aerodynamics (3)

This course introduces students to analytical and numerical methods applicable to airfoils and wings. Student will be able to model two- and three-dimensional flows. Student will understand how to estimate lift and drag of wings using analytically and numerically methods. Students will have an understanding of high-lift systems and of rotor aerodynamics. Prerequisites: Incompressible Flows, Programming

##### AENG 522: Flight Simulation (3)

Overview of various types of simulators; introduction to major software and hardware components of state-of-the-art simulators; development of computer models of aircraft systems and performance characteristics and interfacing the models with each other to achieve high-fidelity, real time aircraft simulation. Field trips to area flight simulation facilities. Use of, and projects in, reconfigurable flight simulator. Prerequisites: Programming skills, Undergraduate Stability and Control

##### AENG 532: Aeroelasticity (3)

This course presents the fundamentals of Aeroelasticity involved with divergence, flutter and control surface reversal of primary lifting surfaces and empennage on aircraft and missiles. Beam vibration, aeroelastic equations and their solutions, unsteady aerodynamics, quasi-steady aerodynamics and finite state aerodynamics. Prerequisites: Undergraduate Flight Vehicle Structures, Linear Vibrations

##### AENG 533: Composite Materials for Structure and Design (3)

Fiber and resin systems, Composite material properties and characterization, lamina, Laminate, Micro-mechanics, Stress analysis of lamina and laminate, Design of laminate, Failure theories, and Manufacturing of laminate. Prerequisites: Undergraduate Mechanics of Solids.

##### AENG 541: Space Dynamics and Control (3)

Motion in moving reference frames; Euler's equations; attitude dynamics; motion of a rigid spacecraft; attitude control systems and maneuvers; spacecraft and attitude feedback control; attitude determination and attitude control.

Prerequisite: Undergraduate Astrodynamics.

##### AENG 551: Space Mission Failures (3)

Space systems are designed to operate in the presence of multiple failures. And yet, occasionally, systems will still fail spectacularly. Reasons for failure include operator error, incorrect design, and manufacturing defects. The odds of these failures occurring can be significantly reduced through

good systems engineering practice. But, in some cases, the very systems engineering practices themselves directly contribute to the failure. This course will introduce the fundamentals of good systems engineering practice. A series of case studies in failures (rockets, spacecraft, rovers, etc.) will be used to illustrate these principles and the new vulnerabilities they introduce. Prerequisite: Undergraduate Astrodynamics, Space Mission Analysis and Design

**AENG 553: Space Mission Analysis and Design (3)**

Basic spacecraft types and their applications. Major subsystems of a spacecraft system. Space environment, propulsion system, power system, structural design, spacecraft dynamics and attitude control, orbit mechanics, thermal control, communications, and ground segments, command and data handling. Spacecraft integration and testing. Prerequisites: Senior or graduate standing.

**AENG 554: Orbital Mechanics (3)**

Orbital dynamics of space vehicles with emphasis on engineering design and application to specific mission analysis; orbit determination and maneuvers; interplanetary transfer and trajectory optimization; proximity operations; perturbation effects. Prerequisite: Astrodynamics

**AENG 555: Guidance, Navigation and Estimation for Dynamic Vehicles (3)**

This course covers three aspects of advanced control of dynamic vehicles. The Estimation module is concerned with topics in automatic control theory related to the modeling of a vehicle state: observability, noise and uncertainty, filtering theory (Weiner Filters, Standard and Extended Kalman Filtering), and simulation. The Guidance module complements Estimation with respect to control: controllability, linear quadratic regulation, as well as a review of rotational dynamics and orbital mechanics. The Navigation module covers real-world examples of sensors and actuators, including inertial systems and GPS, with an emphasis again on noise and uncertainty. Students will develop complete dynamic simulations of real vehicles, including state estimation and control. Prerequisite: Stability and Control, Analysis of Linear Control Systems.

**AENG 556: Modern Control Systems (3)**

Introduction to system theory, state variables and state space description to dynamic systems, linear vector space and dependence. Jordan canonical forms, Cayley-Hamilton theorem, system stability, controllability and observability, relation between state-space and transfer function models. A brief introduction to Nonlinear systems, Lyapunov stability theory will be provided. This course will give the basic knowledge for more advanced control courses, such as nonlinear control, robust control, optimal control, adaptive control. Prerequisite: Analysis of Linear Control Systems.

**AENG 557: Advanced Control Systems (3)**

Introduction to nonlinear systems. Differences between linear and nonlinear systems. Mathematical preliminaries. Equilibrium points of nonlinear systems. Phase plane analysis and limit cycles. Stability definitions for nonlinear systems. Lyapunov's indirect and direct methods. Stability of autonomous and non-autonomous systems. Describing function analysis. Brief introductions to modules on nonlinear control design including adaptive and nonlinear robust control. Applications of nonlinear control design. Prerequisite: AENG 556

**AENG 558 Autonomous Systems Design (3)**

This course introduces students to the design of autonomous systems. Student will demonstrate the ability to evaluate a system and develop a correct mathematical model of its dynamics. Student will understand the fundamentals of autonomous operation and the required integration of the various sub-systems  
Prerequisite: Programming, Analysis of Linear Control Systems.

**AENG 559: Advanced Space Mission Design (3)**

Working in teams, students will perform a complete "Phase A" study of a proposed space mission, culminating in an overall system description, preliminary design and subsystem-level requirements, as well as a feasibility study for developing this mission at St Louis University. The proposed mission will relate to near-term research interests of the instructor and other faculty with the intent of developing a real spacecraft. Students will be responsible for developing requirements and performing trade studies, preliminary sizing and mission analysis for all necessary subsystems (structures, power, thermal control, communications, command & data handling, attitude control, and/or navigation). Where possible, hardware

prototypes and simulations will be created. Students will learn through lecture, individual research, and team projects.  
Prerequisite: AENG 553

**AENG 593: Special Topics (1-3)**

A one-time course on a particular topic, or a trial course that is expected to become a standard course with its own unique course number.

**AENG 596: Masters Project (1-3)**

Theoretical/computational/experimental work that leads to a Project Report and defense of the Project.

**AENG 597: Research Topics (0-3)**

Theoretical/computational/experimental work that is not part of the Thesis or Project.

**AENG 598: Independent Study (1-3)**

A non-classroom course in which a student explores a topic that is related to the student's graduate work and career goals.

**AENG 599: Masters Thesis Research (0-6)**

Research that leads to a Masters Thesis and final defense of the Thesis.

**AENG 697: Research Topics (1-3)**

Theoretical or Computational or experimental work that is not part of the Dissertation.

**AENG 698: Independent Study (1-3)**

A non-classroom course in which a student explores a topic that is related to the student's doctoral work and career goals.

**AENG 699: Doctoral Dissertation Research (0-6)**

A non-classroom course in which a student explores a topic that is related to the student's doctoral work and career goals.

**AVIATION SCIENCE COURSES**

**Department Chair: Terry Kelly, M.S.**

**Aviation Science Core**

**ASCI 521 Aviation Org. Theory and Management (3)**

Explores the various models of organizational structure and culture including the implications for organizational leadership, project management and employee motivation. Topics include contingency theory, systems theory, group dynamics, and change management.

**ASCI 522 Aviation Safety Programs (3)**

Explores the development and administration of safety management systems (SMS) and emergency response plans. Examination of accident related case studies are used to discuss the impact of organizational culture on safety management.

**ASCI 523 Professional Ethics and Standards (3)**

Exposes the participant to various moral and ethical dilemmas inherent to business and more specifically the aviation industry. Participants will identify ethical problems, understand and evaluate differing ethical perspectives, and formulate viable policy recommendations.

**ASCI 546 Quantitative Analysis (3)**

Qualitative Data Analysis will introduce the student to various methods of qualitative analysis. Students will be expected to identify various types of qualitative data, develop research approaches, identify the most appropriate data collection method, interpret and report analysis findings.

**ASCI 547 Qualitative Analysis (3)**

Quantitative Analysis is an introduction to the observation and application of quantitative data analysis. Students who complete this course will be capable of conducting statistical test supporting theoretical applications in the current literature. Additionally, student will be capable of interpreting the results of statistical analysis found in various publications.

**Flight Operations Administration Track**

**FSCI 523 Economics of Air Transportation (3)**

A detailed study of present and future air carrier operations including organization, operating costs and revenues, aircraft utilization and scheduled operations, equipment analysis, aircraft performance in relation to efficient and economic operation, passenger service and cargo operations as they are integrated with the overall economics of efficient air operation

**ASCI 601 Federal and International Regulatory Environment (3)**

Provides in-depth examination of the history and development of domestic and international regulations governing the aviation industry. Participants will discuss the impact of domestic and international governing bodies and the resulting regulations that impact aviation companies in the global marketplace.

**ASCI 602 Flight Operations Business and Administration (3)**

A survey of aviation business strategies including, the marketing of aviation products, principles of product design and management, pricing and revenue management, advertising and promotion, and product distribution channels.

**ASCI 603 Aviation and Public Policy (3)**

Explores the domestic and international regulatory, economic, legal and political environment that aviation companies operate within. The specific influences and relationships between the various market participants and regulating bodies are thoroughly explored.

**Collegiate Flight Education Track**

**EDL 564 The Student in Higher Education (3)**

Exploration and analysis of attitudes and characteristics of the college student population in context of the institutional climate.

**ASCI 605 Legal and Ethical Issues in Collegiate Flight Education (3)**

The exploration and analysis of selected legal and ethical issues related to aviation education regulation, the college student, and the academic institution.

**ASCI 606 Aviation Curriculum Development and Management (3)**

Surveys practices and problems in the development, submission, approval and assessment of collegiate aviation curriculum in light of evolving U.S. and international pilot training considerations and requirements.

**ASCI 607 Aviation Training Methods and Practice (3)**

Provides a critical analysis of practices, expectations, strategies, and responsibilities of the aviation instructor, including an in-depth study of learner-centric pedagogy and its application to collegiate flight education.

**BIOMEDICAL ENGINEERING COURSES**

**Department Chair: David Barnett, Ph.D.**

**BME 500 Seminars (0)**

A weekly departmental lecture-discussion by students, faculty, and invited guests. Registration required in the first semester. Seminar attendance expected in all semesters.

**BME 501 Current Topics I (1)**

(normally taken in the first semester of graduate work)

Presentations by students on a variety of contemporary topics that are fundamental to research in BME.

**BME 502 Current Topics II (1)**

Continuation of 501

**BME 503 Current Topics III (2)**

Continuation of 502

**BME 504 Current Topics IV (2)**

Continuation of 503

**BME 510 Biomedical Signals (3)**

Physiological origins of measured signals. Digital processing of 1D biosignals. Digital processing of bioimages. Computational tools in 1D and 2D. Relating signal properties to physiological parameters. Prerequisites: 200 (Matlab programming, basic numerical methods), 310 (Laplace Transform, Fourier Transform, convolution), BLA-260 (physiology of EEG, ECG, auditory, vision). Recommended for general background language: 320, 330, 340

**BME 515 Sensory Neuroscience (3)**

sensory mechanisms, primarily in humans. physiology of somatosensory, hearing, vestibular, vision, taste and smell. neural mechanisms from engineering viewpoint. Prerequisites: 310 (Laplace Transform, Fourier Transform, convolution), 320 (stress-strain, deformation), 330 (drug transport), 340 (material properties). Recommended: 410 (discrete signals)

**BME 520 Biomechanics (3)**

Study of how physical forces interact with living systems. Examples include blood pressure and flow in the cardiovascular system, airway pressure in the lungs, and forces on the bones and joints during movement. There will be an emphasis on solving mechanical problems in biologic systems and how these systems adapt to applied physical forces. prerequisites: BME 320 Mechanics (analyses of systems at static equilibrium, analyses of the deformation and stress of elastic and plastic materials under various loading modes, introduction to viscoelasticity), BIOL 260 Human Physiology (cells, nervous system, muscle, metabolism, circulatory system, respiration, reproduction, immune system, auditory, vision)

**BME 540 Tissue-Material Interfaces (3)**

The study of Biomaterials utilizes knowledge from biology, chemistry, materials science, mechanics, transport and medicine. We will examine aspects of chemistry, biology, material science and mechanics as they apply to the interaction of a material with a biological system. Our examination of the field will lead to a general understanding of what determines biocompatibility and how to choose biomaterials for various medical applications. Prerequisites: BME430, BME440, BME420 or like courses.

**BME 541 Tissue Engineering (3)**

Beginning with the history of tissue engineering, this course will describe the challenges in developing new functional human tissue including the ethical and legal implications of "designing" tissue, relevant background and current directions in research and development. Prerequisites: 420, 440, Matlab, Mass Transfer, MATH-355

**BME 545 AFM Techniques and Training (3)**

Laboratory to provide an experience and training in atomic force microscopy (AFM) to allow graduate students the ability to utilize the equipment in their research. Students will be exposed to AFM background, along with directed training and independent use of the microscope. Prerequisites: instructor approval.

**BME 550 Experimental Techniques and Design (0-2)**

Laboratory to provide an experience in engineering research and design at a level appropriate to the student's background. Students will work on developing their laboratory skills and ability to successfully design and implement a research plan. Prerequisites: Course open to BME Graduate Students, with instructor approval

**BME 560 Quantitative Physiology (3)**

This course will explore mathematical applications in human physiology which will aid in engineering medical devices. The course is intended for advanced undergraduate engineering students with a background in advanced mathematics, biomaterials, biomechanics, and transport phenomena. Topics to be covered include developmental biology, human anatomy (cardiac, renal, pulmonary, gastrointestinal), physiological function, and functional changed due to disease.

prerequisites: BME430, BME440, BME420, & consent of instructor.

**BME 580 Research Rotation (1-3)**

Students with or without previous research experience are provided the opportunity to carry out a research project with the guidance of a faculty member. A wide variety of topics in the fields of tissue engineering, biomaterials, biomechanics, biosignals, and biomeasurements are available.

Prerequisites: Course open to BME Graduate Students, with instructor approval

**BME 593 Special Topics (1-3)**

An one-time course on a particular topic, or a trial course that is expected to become a standard course with its own unique course number.

**BME 596 Masters Project (1-3)**

Theoretical or experimental work that leads to a Project Report and defense of the Project

**BME 597 Research Topics (1-3)**

Theoretical or experimental work that is not part of the Thesis or Project

**BME 598 Independent Study (1-3)**

A non-classroom course in which a student explores a topic that is related to the student's graduate work and career goals

**BME 599 Masters Thesis Research (0-6)**

Research that leads to a Masters Thesis and final defense of the Thesis.

**BME 697 Research Topics (1-3)**

Theoretical or experimental work that is not part of the Dissertation

**BME 698 Independent Study (1-3)**

A non-classroom course in which a student explores a topic that is related to the student's graduate work and career goals

**BME 699 Doctoral Dissertation Research (0-6)**

Specific work that leads to a written Dissertation, and an oral defense of the Dissertation

**ELECTRICAL AND COMPUTER ENGINEERING**

**Department Chair: Hulyar Mallikarjuna, Ph.D.**

**ECE 510 Power Systems II**

The course builds on topics covered in part I. Study of symmetrical faults, method of symmetrical components and basis for studying unsymmetrical faults, power system protection, power system controls, Transient operation of transmission lines and Transient stability. Prerequisite: ECE 410

**ECE 520 Modern Control Theory**

State-space representation (discrete and continuous) of linear systems. Observability and controllability. Controller design, estimator design and stability concepts. Digital control: continuous and discrete design. Hardware characteristics – A/D, D/A, prefilters. Quantization and sampling effects in digital control. On demand

**ECE 525 Hardware Software Co-design**

This course provides an understanding of hardware software co-design. Topics include type of processors (software), types of integrated circuits (hardware), types of memory and memory architectures, interfacing and system design for real-time operation. This course will emphasis design space exploration and have capstone project requiring the integration of a real-time system into communicating hardware and software pieces. Recommended: ECE 315 and programming proficiency

**ECE 526 Robotics**

This course is an introduction to robot kinematics, sensor technology and basic machine control. This will develop the low level tools required to move robots in an environment and an appreciation of the requirements for doing so in an autonomous fashion. This course will have a capstone project requiring the design or development of a robot platform to meet a goal drawn from current topics. Prerequisites: ECE 325, ECE 350, and programming proficiency.

**ECE 530 Physical Electronics**

This course will focus mostly on MOSFET and CMOS, but also some advance topics in BJT and photonic devices. First non-ideal characteristics of MOSFETs will be discussed, like channel-length modulation and short-channel effects. Threshold voltage modification by doping will be covered. Issues with MOS scaling will be covered. A combination of an n-channel and p-channel MOSFET is used for CMOS devices that form the basis for current digital technology. Fundamentals of the CMOS inverter operation will be discussed. The Operation of a CMOS inverter will be explained. Silicon on Silicon and Silicon on Insulator issues will be covered. Prerequisite: ECE 330

**ECE 530 Advanced Semiconductor Devices**  
Selected topics of special interest to electrical and computer engineering majors. The course builds on topics covered in semiconductor devices. This

course will focus for a large part on MOSFET and CMOS, but also on heterojunction BJT, and photonic devices. Prerequisites: ECE 330.

**ECE 531 Low Noise Electronics Design**

Selected topics of special interest to electrical and computer engineering majors. This course is an introduction to the area of low-noise electronic design. It presents an overview of noise fundamentals, a description of noise models for passive devices and active devices, methods of calculating the noise performance of circuits, and techniques for minimizing noise in circuit design. Prerequisites: ECE 331

**ECE 535 Digital IC Design**

Selected topics of special interest to electrical and computer engineering majors. This course covers topics of interest in digital integrated circuits design such as CMOS inverters and other gate circuits, interconnects, and challenges facing IC designers. Prerequisites: ECE 330

**ECE 541 Radar System Design and Analysis**

Basic radar definitions; transmitter power, antenna coverage and gain; target cross-section, receiver noise and system losses; radar equations; pulsed radars; reflection of radar waves and weather conditions; synthetic array radars and pulse compression techniques; track-while scan and electronic scan; millimeter wave and laser radar systems. Prerequisites: ECE 340, ECE 460

**ECE 542 Microwave Theory and Techniques**

Microwave transmission lines; microwave network analysis; microwave resonators; microwave components; active microwave circuits; microwave filters; and introduction to microwave systems. Prerequisites: ECE 440

**ECE 543 Antenna Theory and Design**

Antenna fundamentals; definitions; some simple radiating systems; antenna arrays; wire antennas; broadband antennas; and aperture antennas. Prerequisites: ECE 440

**ECE 550 Advanced Filter Design**

Frequency transformations, high-pass and low-pass band elimination filters, sensitivity. Passive ladder, ladder design with simulated elements, leap frog simulation of ladders. Switched-capacitor filters, delay filters, delay equalization. The Z-transform, IIR and FIR digital filters. On demand. Prerequisite: ECE 402

**ECE 551 Image Processing**

Introduction to digital images and image capture. Image transforms: DFT, FFT, Walsh, Hadamard, DCT, Hough and Hotelling transforms. Image enhancement, image restoration, image encoding and image segmentation. On demand.

**ECE 555 Stochastic Processing**

**ECE 560 Communication Systems**

**ECE 561 Spacecraft Communications**

Overview of satellite systems; orbits and launching methods; the geostationary orbit; radio wave propagations; the space segment; the earth segment; the space link; interference; satellite access; satellite services and the internet. Prerequisite: Permission of instructor.

**ECE 562 Cellular Communications**

**ECE 593 Special Topics (1-3)**

A special topic course is based on faculty and students interests. This could be an avenue to develop new courses on a trial basis.

**ECE 596 Master's Project (3)**

Theoretical or experimental work that leads to a Project Report and defense of the Project.

**ECE 597 Research Topics (1-3)**

Theoretical or experimental work that is not part of the Thesis or Project.

**ECE 598 Independent Study (1-3)**

A non-classroom course in which a student explores a topic that is related to the student's graduate work and career goals.

**ECE 599 Master's Thesis Research (0-6)**

Research that leads to a Master's Thesis and final defense of the Thesis.

**ECE 697 Research Topics (1-3)**

Theoretical or experimental work that is not part of the Dissertation.

**ECE 698 Independent Study (1-3)**

A non-classroom course in which a student explores a topic that is related to the student's graduate work and career goals.

**ECE 699 Doctoral Dissertation Research (0-6)**

Special work that leads to written Dissertation, and an oral defense of the Dissertation.

**MECHANICAL ENGINEERING**

**Department Chair: Swami Karunamoorthy, D.Sc.**

**MENG 500: Seminar (0)**

Presentations of current research by students, faculty, and guests. Registration required in the first semester. Seminar attendance expected in subsequent semesters.

**MENG 501: Advanced Fluid Dynamics (3)**

Introduction to the physical concepts and mathematical analysis of fluid flow. Kinematics, stress, and thermodynamic properties of a fluid. Integral and differential equations for conservation of mass, momentum and energy. Applications in potential flow, viscous flow and compressible flow. Fluid flow measurements. Prerequisite: Undergraduate fluid dynamics.

**MENG 502: Technology Entrepreneurship (3)**

The course is intended as a general introduction to the models and applications of entrepreneurship. The course provides the basis for technology entrepreneurship mindset. The course will introduce the three major forms of entrepreneurship-independent (as in self-employment), corporate entrepreneurship and social venturing. In addition, the course will educate students about the three key elements of modern entrepreneurship: the recognition and creation of opportunities, the development of strategies to realize those opportunities, and the packaging of those opportunities for maximum impact in intended markets. Prerequisites: Graduate Standing

**MENG 503: Numerical Methods Using Matlab and Labview (3)**

This course will introduce students to the Matlab and Labview programming packages while teaching how to use software and numerical methods to solve engineering problems. Problems of interest to Aerospace, Mechanical, Civil, Electrical, and Biomedical Engineering programs will be addressed. Prerequisites: Undergraduate programming coursework.

**MENG 512: Experimental Methods in Fluid Dynamics (3)**

This lab-based course introduces students to the modern techniques used to investigate fluid dynamic problems, including pitot-static tubes, wake rakes, thermal anemometry, laser Doppler anemometry, particle image velocimetry, and pressure and temperature sensitive paints. Prerequisite: Undergraduate fluid mechanics.

**MENG 517: Viscous Flows (3)**

This course covers the development of the Navier-Stokes equations; laminar and turbulent boundary layers and associated similarity laws; introduction to stability; analytical and numerical solutions of engineering problems will be emphasized. Prerequisites: Undergraduate fluid dynamics and heat transfer.

**MENG 519: An Introduction to Turbulence (3)**

This course introduces the nature and origins of turbulence, transition mechanisms, turbulent transport of momentum and heat, dynamics of turbulence, wall-bounded and free shear flows, spectral dynamics, and statistical description of turbulence. Prerequisites: Undergraduate fluid mechanics, heat transfer.

**MENG 533: Composite Materials for Structure and Design (3)**

Fiber and resin systems, Composite material properties and characterization, lamina, Laminate, Micro-mechanics, Stress analysis of lamina and laminate, Design of laminate, Failure theories, and Manufacturing of laminate. Prerequisites: Undergraduate Mechanics of Solids.

**MENG 534: Finite Element Analysis I (3)**

Variational forms for 1D and 2D, Rayleigh Ritz, Galerkin, element matrices and assembly, formulation of axial/truss/beam/plane-frame structural elements, 2D field problem formulation, linear and triangular elements for heat transfer/irrotational flow, torsion of noncircular sections, elasticity, higher order and mapped elements, numerical integration. Lab applications and project included. Prerequisites: Undergraduate Mechanics of Solids.

**MENG 535: Finite Element Analysis II (3)**

Review of the finite element method and elasticity, variational methods, derivation of stiffness and mass matrices, isoparametric element formulation, 3D beam elements, plates and shells, Guyan reduction, constraints, statically equivalent loading, eigenvalue problems, modal superposition, dynamic transient response, nonlinear finite element analysis (large deformation, plasticity, contact.) Prerequisite: MENG 534

**MENG 536: Multidisciplinary Optimization (3)**

Linear and nonlinear programming, unconstrained optimization, constrained optimization, structural optimization of large-scale systems with constraint approximations, analytical and numerical sensitivity analysis, design variable linking, optimization techniques for finite element problems, surrogate modeling techniques, shape and topology optimization. Interdisciplinary engineering applications emphasized. Prerequisite: MENG 534

**MENG 537: Structural Reliability (3)**

Fundamentals of reliability theory (factor of safety vs. reliability, modeling uncertainty, random variable distributions, design process uncertainty), Simulation methods and integration, computational issues for large scale problems, expansion techniques), second moment methods, reliability of structural systems (response surfaces, FFT approach, series and parallel systems, system reliability). Interdisciplinary engineering applications included. Prerequisite: MENG 534

**MENG 538: Advanced Mechanics of Solids (3)**

Elasticity relations, linear elasticity assumptions, St. Venant's principle, transformation of stress, principal stresses in 3D, plane elasticity, Airy stress function, polynomial solutions, thermal stresses, relations in polar coordinates, point load solutions, stress concentration, axisymmetric problems, stresses in disks & cylinders, energy methods, Rayleigh Ritz, Buckling. Emphasis on advanced applications. Prerequisite: Undergraduate Mechanics of Solids

**MENG 539: Fracture Mechanics and Plasticity (3)**

Advanced elasticity topics: plate theory, stress singularities at re-entrant corners, intro to fracture mechanics, mechanics of bonded interfaces, elastic contact mechanics; Plasticity topics: yield criteria in metal plasticity, deformation and incremental plasticity, elastic-plastic stress-strain relations, strain hardening, small-strain elastoplasticity (bending, torsion, buckling, disks and cylinders).

Prerequisite: MENG 534, MENG 538

**MENG 593: Special Topics (1-3)**

A one-time course on a particular topic, or a trial course that is expected to become a standard course with its own unique course number.

**MENG 596 Master's Project (1-3)**

Theoretical/computational/experimental work that leads to a Project Report and defense of the Project.

**MENG 597: Research Topics (0-3)**

Theoretical/computational/experimental work that is not part of the Thesis or Project.

**MENG 598: Independent Study (1-3)**

A non-classroom course in which a student explores a topic that is related to the student's graduate work and career goals.

**MENG 599: Master's Thesis Research (0-6)**

Research that leads to a Master's Thesis and final defense of the Thesis.

**MENG 697: Research Topics (1-3)**

Theoretical or Computational or experimental work that is not part of the Dissertation.

**MENG 698: Independent Study (1-3)**

A non-classroom course in which a student explores a topic that is related to the student's doctoral work and career goals.

**MENG 699: Doctoral Dissertation Research (0-6)**

A non-classroom course in which a student explores a topic that is related to the student's doctoral work and career goals.

**CIVIL ENGINEERING COURSES**

Department Chair: John Woolschlager, Ph.D.

**Structures Track**

**CVNG 405/505 – Advanced Structural Analysis (3)**  
Direct stiffness method for the analysis of two-dimensional trusses and frames, equivalent nodal forces, thermal and settlement effect, principal of virtual work, space trusses, grid structures, static condensation, Lagrange multipliers, tapered elements. Prerequisite: CVNG 301 or equivalent.

**CVNG 407/507 – Structural Dynamics (3)**  
Single degree of freedom systems, lumped-mass multi-degree systems, and multi-degree of freedom systems. Numerical evaluation of system responses due to blasts, wind, and earthquake loading. Applications. Prerequisite: CVNG 301 or equivalent.

**CVNG 409/509 – Advanced Reinforced Concrete (3)**  
Advanced topics in flexural design; torsion in beams; behavior and design of slender columns; biaxial bending of columns; design of two way slabs; inelastic analysis of flexural members; use of strut and tie analysis; yield line analysis, design of mat foundations. Prerequisite: CVNG 403.

**CVNG 411/511 – Advanced Steel Design (3)**  
Interpretation of current codes as related to the physical behavior of steel structures. Design of structural steel members: tension, compression, flexural and beam-columns. Design of connections. Prerequisite: CVNG 403.

**CVNG 413/513 – Bridge Engineering (3)**  
Structural systems for bridges, loading, analysis by influence lines, slab and girder bridges, composite design, pre-stressed concrete, rating of existing bridges, specifications and economic factors. Prerequisite: CVNG 403.

**CVNG 515 – Prestressed Concrete (3)**  
Theory and analysis of prestressed concrete members by various methods of prestressing; design of simple and continuous beams and slabs; prestress losses; composite beams. Extensive study of materials used in prestressed concrete. Precast concrete systems. Prerequisite: CVNG 403.

**CVNG 517 – Seismic Design (3)**  
Theory, analysis, and design of building structures under earthquake loading. Application of current codes and standards related to steel, concrete, masonry, and wood structures. Prerequisites: CVNG 403.

Non-CVNG courses applicable to Structures Track

**MENG 533 – Composite Materials for Structure and Design (3)**

**MENG 534 – Finite Element Analysis I (3)**

**MENG 535 – Finite Element Analysis II (3)**

**MENG 536 – Multidisciplinary Optimization (3)**

**MENG 537 – Structural Reliability (3)**

**MENG 538 – Advanced Mechanics of Solids (3)**

**MENG 539 – Fracture Mechanics and Plasticity (3)**

**Environmental and Sustainable Engineering Track**

**CVNG 419/519 – Sustainable Land Development Engineering (3)**  
Introduction to land development engineering and urban planning; site design and sediment control; transportation planning and roadway design; water resource and waste disposal issues; ecological impact analysis; application sustainable development principles to land development projects at local and regional scales. Prerequisite: CVNG 203.

**CVNG 421/521 – Design of Water Quality Management Facilities (3)**

Review of water and wastewater characteristics; drinking water, receiving water and effluent standards. Overview of the common physical, chemical, and biological processes used for the treatment of waters and wastewaters. Analysis of unit operations, processes, and systems used in the design of facilities for maintaining water supply quality, wastewater control, and aquatic pollution control. Prerequisite: CVNG 203.

**CVNG 423/523 – Air Pollution (3)**

Fundamentals of meteorology, air pollution health impacts, particulate control mechanisms and devices, and gaseous pollutant control mechanisms and devices. Course includes detailed design projects involving major air pollution control devices. Prerequisite: CVNG 203.

**CVNG 525 – Solid and Hazardous Waste Regulation and Treatment (3)**

Solid and hazardous waste management, including characterization, collection system design, waste minimization, design of landfills and incinerators, and remediation principles. Major aspects of managing hazardous waste, including regulation, pollution prevention, treatment, disposal, spill clean-up, and site remediation. Prerequisite: CVNG 203.

**CVNG 527 – Biological Treatment Systems (3)**

General fundamentals of environmental microbiology and its application to drinking water treatment and distribution, wastewater treatment, water pollution control, and natural systems. Theory and design of basic biological operations and processes. Prerequisites: CVNG 4xx (Design of Water Quality Management Facilities). Prerequisite: CVNG 4xx/5xx – Design of Water Quality Management Facilities.

**CVNG 529 – Physical/Chemical Treatment Systems (3)**

The applicability of water chemistry and physical processes on natural waters and water treatment systems. Theory and design of physical and chemical operations and processes. Prerequisite: CVNG 4xx/5xx – Design of Water Quality Management Facilities.

**CVNG 531 – Advanced Design of Wastewater Treatment Systems (3)**

This course covers detailed analysis of physical and biological processes used in advanced wastewater treatment. Class includes a water or wastewater design project using a dynamic computer model to model to optimize a real treatment plant design. Prerequisites: CVNG 5xx – Biological Treatment Systems.

**CVNG 533 – Groundwater Analysis and Site Remediation (3)**

Introduction to hydrodynamics of flow through porous media. The primary emphasis is on the analysis of steady and unsteady flow in confined and unconfined aquifers. Biological and physical/chemical remediation technologies, including theory and application, for groundwater and hazardous wastes. Prerequisites: CVNG 313, CVNG 5xx – Biological Treatment Systems.

Non-CVNG courses applicable to Environmental and Sustainable Engineering Track

**MENG 534 – Finite Element Analysis I (3)**

**MENG 536 – Multidisciplinary Optimization (3)**

**BME 505 – Data Handling**

**Geotechnical Engineering Track**

**CVNG 435/535 – Advanced Geotechnical Engineering (3)**

Introduction to the nature and origin of soils, rocks, geomembranes, and geotextiles; engineering significance of geologic landforms and soil deposits on construction and structures; identification and engineering classification of soils as it relates to structures; engineering behavior and operational properties of soils; permeability, compressibility, shearing resistance of geotechnical materials. Prerequisite: CVNG 309.

**CVNG 537 – Sediment Transport Engineering (3)**

Sediment properties and the mechanics of sediment transport. Threshold of movement. Riverbed load and suspended load theories. Regime theory and stable channel design. River diversion problems. Erosion. Geomorphologic and water quality aspects. Prerequisites: CVNG 309 and CVNG 313.

**CVNG 539 – Soil Dynamics (3)**

Vibration of elementary systems, foundation vibratory theory, foundation design for vibratory loads, foundation isolation, wave propagation theory, response of soils to dynamic loading, dynamic soil properties, dynamic behavior of waste materials, field and laboratory methods for evaluation of dynamic soil properties, liquefaction of sands, vibratory compaction of granular materials. Prerequisite: CVNG 4xx/5xx Foundation Analysis and Design.

**CVNG 441/541 – Slopes and Retaining Structures (3)**  
Selected topics in soil response and technology needed in conventional geotechnical analysis and design; shearing behavior in clays; subsurface investigation; lateral earth pressures, retaining walls, and sheet pile walls; stability of slopes. Prerequisite: CVNG 4xx/5xx Foundation Analysis and Design.

**CVNG 543 – Foundation Engineering II (3)**  
Advanced classical earth pressure theories. Design of shallow foundations (isolated, combined, and strip footings), with specific attention to issues of mutual concern and interest to geotechnical and structural engineers. Review of factors that serve as the basis for selection of foundation type. Interpretation of subsurface exploration results. Settlement analyses and limit bearing capacity analyses. Communications and interaction between geotechnical and structural engineers. Structure and contents of a geotechnical report. Detailed treatment of geotechnical/structural design criteria and methodologies for various types of shallow and deep foundations. Prerequisite: CVNG 4xx/5xx Foundation Analysis and Design.

Non-CVNG courses applicable to Geotechnical Track

**MENG 534 – Finite Element Analysis I (3)**

**MENG 535 – Finite Element Analysis II (3)**

**MENG 536 – Multidisciplinary Optimization (3)**

Transportation Analysis and Planning Track

**CVNG 445/545 – Traffic Engineering (3)**  
Design, analysis and use of traffic control devices. Traffic administration, traffic flow theory, and highway capacity. An introduction to computer and traffic engineering. Acquisition, evaluation, statistical analysis and reporting of traffic engineering data used to design, evaluate and operate transportation systems. Prerequisite: CVNG 311.

**CVNG 447/547 – Urban Transportation Planning (3)**  
Systems engineering for traffic generation, distribution assignment; analysis and traffic engineering procedures as applied to urban transportation planning and design. Emphasis on urban transportation planning, alternate road alignments and alternate evaluation. Legal aspects of transportation planning and engineering. Prerequisite: CVNG 311.

Non-CVNG courses applicable to Transportation Planning Track

**PPS 530 – Planning the Metropolitan**

**PPS 525 – Infrastructure Planning and Process**

**PPS 531 – Land Use Planning and Analysis**

**ASCI 501 - Analysis of Aviation Safety Data**

**ASCI 502 - Aviation Safety Data Analysis**

**ASCI 508 - Management of Avtn Safety Prog**

**ASCI 512 - Aviation Safety Quality Issues**

**ASCI 515 - Avtn Incident/ Accident Analys**

**ASCI 522 - Aviation Safety Programs**

General Courses

**CVNG 593 – Special Topics (1-3 credits per semester)**  
A one-time course on a particular topic or a trial course that is expected to become a standard course with its own unique course number.

**CVNG 596 – Master's Project (1-3 credits per semester)**  
Theoretical/computational/experimental work that leads to a Project Report and presentation of the Project.

**CVNG 599 – Master's Thesis Research (0-6 credits per semester)**  
Research that leads to a Master's Thesis and final defense of the Thesis.

**CVNG 699 – Doctoral Dissertation Research (0-6 credits)**  
A non-classroom course in which a student explores a topic that is related to the student's doctoral work and career goals.

## Graduate Offerings in Advanced Dental Education

**Rolf G. Behrents, D.D.S., M.S., Ph.D.,**  
*Executive Director*

The Center for Advanced Dental Education (CADE) at Saint Louis University is the academic division through which advanced training in dentistry is administered. The Center is committed to advancing the science and the art of all dental specialties through outstanding education, patient care, and research while promoting a multidisciplinary focus. At the present time, CADE is comprised of three graduate dental training programs: Endodontics, Orthodontics, and Periodontics. The Orthodontic program is wholly based at Saint Louis University, while the Endodontics and Periodontics programs are offered in close affiliation with Southern Illinois University School of Dental Medicine, Alton, Illinois. All advanced dental training programs are fully accredited by the Commission on Dental Accreditation of the American Dental Association.

The prerequisite for matriculation in any CADE graduate dental training program is possession of a D.D.S., D.M.D., or equivalent general dental degree. Selection for admission is based upon the completed application file and a personal interview. Successful completion of all CADE graduate dental program requirements results in a Master of Science in Dentistry (Research) degree and a specialty certificate of completion of didactic and clinical requirements. Each individual specialty program demands full-time, in-residence participation. The three programs vary in length and differ in educational goals. Requirements include courses from the core listings below as well as specialty courses unique to the individual discipline (listed subsequently). The goal of the core curriculum is to provide advanced concepts in the sciences that comprise the foundation of graduate dental education.

### COURSE DESCRIPTIONS

#### Graduate Courses

**CAD.501 Pain: Anatomy, Physiology, Psychology, Diagnosis & Treatment (1)**

Explores multiple topics of pain with special emphasis on head and neck pain and conditions and/or syndromes that mimic dental pain. Protocols for dealing with both dental and non-dental "pain patients" will be addressed. (Offered every year.)

**CAD.503 Advanced Oral Microbiology (2)**

Examines the interface of human host and its microbial inhabitants converging to cause disease. Describes oral ecosystems resulting from interaction between human anatomy and physiology and microbial populations and their physiology with emphasis on the pulpal, periapical, and periodontal regions. Includes factors that maintain population balance and health or cause population imbalance and disease in these ecosystems. Includes management and prevention of oral microbial disease. (Offered every year.)

**CAD.504 Molecular Biology of the Cell (2)**

Cell and molecular biology of the tooth and supporting structures. Attention given to molecular structure and function of composite proteins of tooth and bone and to cellular and physiological mechanisms key to driving development and repair. (Offered every year.)

**CAD.505 Introduction to Statistical Inference (3)**

Nature of measurement in graduate dentistry. Basic principles and techniques of research analysis, particularly in graduate dental research. Introduction to probability theory and sampling theory; criteria of reliability and validity. Fundamental concepts of descriptive and inferential statistics, introduction to levels of measurements and application of parametric and non-parametric tests. (Offered every year.)

**CAD.506 Ethics in Dental Research and Practice (0)**

Two-part course requiring completion of online course BBS.510 Responsible Conduct in Research, and attendance and participation in lectures on Principles of Ethics and Code of Professional Conduct and their relationship to ethical decision making processes in dental practice. (Offered every year.)

**CAD.508 Multidisciplinary Diagnosis and Treatment Planning I (1)**

Diagnosis and treatment planning of various types of multidisciplinary dental problems through case studies. Various diagnostic and treatment modalities are discussed in order to render the most efficacious plan of patient treatment. Application of biomedical sciences to clinical oro-facial problems at the dental specialty level. (Offered every year.)

**CAD.509 Research in Graduate Dentistry (1)**

Research planning, design and qualitative and quantitative methodologies are examined together with the steps taken in the preparation of a research proposal, the conducting of the research in an efficient and ethical manner, and the writing and defense of a thesis. A culminating course requirement is the oral delivery and defense of a research proposal and the preparation of the associated literature review. (Offered every year.)

**CAD.510 Dental Therapeutics (1)**

A comprehensive review of the pharmacological considerations of clinical dentistry. Special emphasis is placed on dentally prescribed medications and their effects on systemic disease and associated systemic drugs. (Offered every year.)

**CAD.511 Principles of Practice Management (1)**

A practice management course which covers a broad range of business management topics with an emphasis on application of concepts. (Offered every year.)

**CAD.514 TMJ Disorders (1)**

A lecture series to improve the understanding of TMJ disease and related disorders and to provide a rationale for differential diagnosis and treatment. (Offered every year.)

**CAD.516 Advanced Oral Medicine (1)**

Material on oral diagnosis and oral medicine is presented to enhance the ability to make an accurate diagnosis of oral and general diseases. Special emphasis is placed on treatment of the medically compromised patient. (Offered every year.)

**CAD.517 Advanced Oral Pathology (1)**

Oral diseases with similar clinical appearances are presented. A differential diagnosis will be developed. For each entry, the etiology, biologic history, clinical features, histologic characteristics, progress, and current treatment will be identified. (Offered every year.)

**CAD.519 Advanced Head and Neck Anatomy (2)**

Presentation of the anatomy of specific areas of the head and neck that relate to dental practice. Emphasis will be placed upon the interrelationships, clinical significance and variation of the structures studied. (Offered every year.)

**CAD.522 Clinical Immunology (1)**

A comprehensive review of inflammation and immunity and how they protect or harm the host with special focus on clinical dentistry. (Offered every year.)

**CAD.523 Business Law (2)**

A discussion of the legal, professional, and ethical aspects of dental practice with consideration of practice acquisition, location, promotion, personnel issues, contract and tort liabilities, practice format and administration, taxes, insurance and estate planning. (Offered every year.)

**CAD.524 Implants & Temporary Anchorage Devices (1)**

A lecture-discussion course introducing dental implants for applications in periodontics and temporary anchorage devices to support intra-oral clinical mechanics in orthodontics. Autotransplantation of teeth within interdisciplinary patient care is also examined. (Offered every year.)

**CAD.G595 Special Study for Examinations (0)**

**John F. Hatton, D.M.D.,**  
*Program Director*

The Center for Advanced Dental Education at Saint Louis University offers a 24-month program in the specialty of Endodontics that leads to a Master of Science in Dentistry (Research) degree. The didactic and clinical phases of the program are conducted at both Saint Louis University and Southern Illinois University School of Dental Medicine, Alton, Illinois. Focus of the training program is three-fold: a comprehensive clinical experience involving diagnosis and treatment of all categories of nonsurgical and surgical endodontic cases; the didactic core and specialty courses encompassing biomedical and clinical concepts; and research related to the discipline of endodontics. The program is fully accredited by the Commission on Dental Accreditation of the American Dental Association. Following completion of the program, graduates are educationally qualified for certification by the American Board of Endodontics.

## Master of Science in Dentistry (Research)

**Prerequisites**

D.D.S., D.M.D., or equivalent general dental degree.

**Required Courses**

All core courses described under the section entitled Center for Advanced Dental Education except CAD.514, CAD.523, and CAD.524 are required. In addition, required endodontic specialty courses include all courses described below.

**Additional Requirements**

Supervised clinical endodontic treatment of patients; comprehensive endodontic specialty examinations utilizing written, oral, and practical clinical formats; teaching practicum. Total required credit-hours: 50

*No formal minor is permitted.*

**COURSE DESCRIPTIONS****Graduate Courses****ENDG.500 Preclinical Endodontic Technique (1)**

A didactic and laboratory introduction to basic and advanced endodontic clinical principles and techniques. A format to experience alternate clinical treatment methods. (Offered every year.)

**ENDG.520 Literature Review (1)**

An intense, ongoing overview of endodontic literature to assist the resident in developing a sound base of scientific knowledge regarding the fundamentals of endodontics. (Offered every academic term.)

**ENDG.521 Literature Review II (1)****ENDG.522 Literature Review III (1)****ENDG.523 Literature Review IV (1)****ENDG.524 Literature Review V (1)**

# ENDODONTICS (CADE)



**ENDG.530 Preclinical Teaching Practicum (0)**

Supervised teaching participation in the instruction of undergraduate dental students in the preclinical endodontic technique course. (Offered every year.)

**ENDG.531 Clinical Teaching Practicum (0)**

Supervised teaching participation in the clinical instruction of undergraduate dental students. (Offered every year.)

**ENDG.541 Pulp Biology (1)**

Normal and diseased pulp conditions and their relationship to periapical tissues. Emphasis is placed on pulpal neural and vascular supply; pulpal defense mechanisms; injury, aging, and retrogressive changes; healing and repair of periapical tissues; and histopathology of periapical lesions. (Offered every year.)

**ENDG.547 Concepts in Biomedical Science (1)**

A lecture/discussion series designed to integrate the student's didactic and clinical experiences in the specialty area with other dental and medical specialty subjects. (Offered every other year.)

**ENDG.551 Principles of Endodontic Surgery (1)**

A comprehensive consideration of endodontic surgery is presented. Instruction and training in the application of relevant biomedical science to meet surgical and clinical requirements is emphasized. (Offered every year.)

**ENDG.552 American Board of Endodontics Review (1)**

Preparation for certification by the American Board of Endodontics. Course includes information on board protocol, case presentation format, and a review of prior board materials to give a foundation for continued preparation to achieve diplomate status. (Offered every year.)

**ENDG.560 Clinical Endodontics (1)**

Clinical and didactic course relating the biomedical sciences to clinical endodontic problems in order to gain a level of knowledge necessary to manage the various modalities of endodontic therapy. Includes the therapeutic management of routine, complex, and surgical clinical cases. (Offered every academic term.)

**ENDG.561 Clinical Endodontics II (2)****ENDG.562 Clinical Endodontics III (2)****ENDG.563 Clinical Endodontics IV (1)****ENDG.564 Clinical Endodontics V (2)****ENDG.565 Clinical Endodontics VI (2)****ENDG.566 Clinical Endodontics VII (1)****ENDG.591 Endodontic Journal Club (0-1)**

A consideration of recent developments and current literature in endodontics and related fields. (Offered every academic term.)

**ENDG.595 Special Study for Examinations (0)****ENDG.599 Thesis Research (0-6)****ENDG.5CR.90 Master's Degree Study (0)**

## ORTHODONTICS (CADE)

**Rolf G. Behrents, D.D.S., M.S., Ph.D.,**  
*Program Director*

The Center for Advanced Dental Education at Saint Louis University offers a graduate training program in Orthodontics that is 30 months in length. The program offers three basic areas of training: an extensive and comprehensive clinical

experience that involves diagnosis, treatment planning, active treatment and retention of patients representing a variety of malocclusions and craniofacial deformities; a didactic core and specialty education that encompasses biomedical sciences as well as clinical concepts; and research related to the discipline. The program is fully accredited by the Commission on Dental Accreditation of the American Dental Association. Following completion of the program, graduates are educationally qualified for certification by the American Board of Orthodontics.

## Master of Science in Dentistry (Research)

**Prerequisite**

D.D.S., D.M.D., or equivalent general dental degree.

**Required Courses**

All core courses described under the section entitled Center for Advanced Dental Education are required except for CAD.503, CAD.510, and CAD.522. In addition, specialty courses required include all courses described below.

**Additional Requirements**

Supervised active and retention clinical orthodontic treatment of patients; comprehensive orthodontic specialty examinations utilizing written, oral, and practical clinical formats. Total required credit hours: 83.

*No formal minor is permitted.*

**COURSE DESCRIPTIONS****Graduate Courses****ORTH.501 Fundamentals of Orthodontics (2)**

Team-taught by the orthodontic faculty during the first summer and fall terms of the graduate program. Course is based upon a respected, comprehensive, graduate text in the specialty. Applied science and techniques of diagnosis, treatment planning, active therapy and retention are reviewed. (Offered every year.)

**ORTH.503 Facial Development (2)**

An overview of current thought in the field of craniofacial biology. The graduate student is exposed to the changes that take place in the face from embryo to adult. Hypothetical control mechanisms, clinical application of facial growth principles, and the experimental evidence are explored in a critical review of relevant literature. (Offered every year.)

**ORTH.510 Biomechanics (2)**

Concepts of orthodontic displacement and force. Kinematics and biomechanics of tooth movement. Deformable-body mechanics, materials science, mechanical analyses, and selection of orthodontic-appliance components. Instantaneous and dynamic analyses of example appliances and clinical mechanics. (Offered every year.)

**ORTH.525 Clinical Cephalometrics (2)**

Introduction to the use of cephalometric radiographs in clinical orthodontics. Overview of cephalometric analyses of historic importance. Lectures and demonstrations with a laboratory component that includes cephalometric tracing technique, visualization of treatment objectives for orthodontic and surgical orthodontic cases, analysis of growth pattern, and treatment results. (Offered every year.)

**ORTH.535 Surgical Orthodontics (1)**

Acquaints the graduate student with those surgical procedures that directly relate to orthodontic treatment plans. The lecture series encompasses a review of diagnostic procedures, surgical techniques for the treatment of maxillary and/or mandibular skeletal excess and deficiency as well as laterognathism, Class II malocclusion and adjunctive techniques of genioplasty for correction of microgenia and macrogenia. In addition to surgical consideration of jaw deformities, time is allocated for miscellaneous pathological conditions. (Offered every year.)

**ORTH.537 Orthodontic Problems Related to Cleft Palate Patient (1)**

A study of the various aspects of the congenital cleft lip and palate condition with a consideration of the several professional areas concerned with the total habilitation of the cleft lip and palate patient. Coursework includes diagnosis and treatment of patients at the Cardinal Glennon Children's Hospital Cleft Palate Center. (Offered every year.)

**ORTH.539 Speech Problems Related to the Oral Mechanism (1)**

Basic anatomy and physiology of the speech mechanism. Introduction to phonetics and speech sound production. Survey of communication disorders; significance of the disorder for the orthodontist, and orthodontic treatment plan. (Offered every fall semester.)

**ORTH.540 History of Orthodontics (1)**

Evaluating concepts in pre-specialization disciplinary organization, ethical considerations and humanist aspects of the profession. (Offered every year.)

**ORTH.549 Diagnostic Procedures in Orthodontics (1)**

An introduction to diagnostic procedures including the taking of the prospective patient's medical and dental history, conducting the clinical examination and an evaluation of dental and oral function. The analysis of orthodontic study casts. (Offered every year.)

**ORTH.550 Diagnosis and Treatment Planning I (1)**

Evaluation and treatment planning of various types of malocclusions. (Offered every year.)

**ORTH.553 Clinical Diagnosis I (1)**

The clinical application of the various diagnostic procedures and philosophies of orthodontic diagnosis and a presentation of practical procedures to help in the management of unusual problems that can arise during the course of treatment. (Offered every year.)

**ORTH.554 Clinical Diagnosis II (1)**

Continuation of Clinical Diagnosis I. (Offered every year.)

**ORTH.555 Orthodontic Analysis and Treatment Modalities (1)**

An in-depth presentation of specific and complex problems that can and do arise in orthodontic practice. Recognition, precautions, and various treatment modalities for each problem are discussed. Advances in orthodontic technology will be presented utilizing diagrams, photographs, clinical aids, and actual demonstrations to further enhance knowledge in dealing with difficult situations. (Offered every year.)

**ORTH.556 Clinical Case Conference (0-1)**

In seminar format, each class meeting features the presentation by one of the students of the work-up and diagnosis of an active orthodontic patient. The other students and faculty propose and critically evaluate possible treatment plans and modalities. The presenting student then reviews the actual treatment plan being followed and the progress in therapy to date. (Offered every year.)

**ORTH.558 Clinical Specialty Seminars (1)**

Individual clinical faculty members present their personal philosophies of diagnosis, treatment planning, active therapy, and retention. These sessions serve also to introduce the students to a diversity of techniques and appliances and therapy for unusual and exceptional categories of patients and cases perhaps not routinely seen in the mainstream of orthodontic care. (Offered every year.)

**ORTH.560 Introduction to Clinical Orthodontics (1)**

A didactic and laboratory introduction to provide an overview of the range of problems encountered in clinical orthodontics and approaches to those problems as well as techniques of orthodontic appliance fabrication and their applications to assist in solving those problems. (Offered every year.)

**ORTH.561 Introduction to Clinical Orthodontics II (1)**

A continuation of ORTH.560. A concentrated, didactic course that addresses in some depth the procedures of diagnosis, treatment planning, and application of clinical therapy toward the solutions of orthodontic problems in patients of various ages and dental development. (Offered every year.)

**ORTH.562 Principles of Orthodontic Techniques (2)**

Course includes typodont setup in normal occlusion before banding; philosophy of treatment; and a coordination of lectures and seminars with laboratory demonstration on arch wire fabrication and reasons for each bend. (Offered every year.)

**ORTH.563 Principles of Orthodontic Techniques II (2)**

Course includes treatment of Class II, Division 1 non-extraction case and treatment of Class I bimaxillary-protrusion case, requiring removal of permanent teeth. (Offered every year.)

**ORTH.570 Clinical Procedures (1)**

Introduction of the first year students to the policies, personnel, and protocol of the orthodontic clinic and the ancillary facilities that complement the clinic. (Offered every year.)

**ORTH.571 Clinical Orthodontics I (2)**

Supervised patient treatment in the Orthodontic Clinic. (Offered the first semester and every academic term thereafter.)

**ORTH.572 Clinical Orthodontics II (3)**

**ORTH.573 Clinical Orthodontics III (1)**

**ORTH.574 Clinical Orthodontics IV (3)**

**ORTH.575 Clinical Orthodontics V (3)**

**ORTH.576 Clinical Orthodontics VI (1)**

**ORTH.577 Clinical Orthodontics VII (3)**

**ORTH.578 Clinical Orthodontics VIII (0-3)**

**ORTH.580 Seminar: Child and Adolescent Psychology (1)**

The personal, social development of the child and adolescent from the perspective of life-span psychology is presented and discussed in the context of orthodontics, which includes the psycho-social impact of malocclusion, patient-parent-doctor motivations, communication and interpersonal relationships, patient cooperation and behavior modifications, and the psychology of the orthodontist. (Offered every year.)

**ORTH.584 Diagnostic Seminars on Early & Mixed Dentition Treatment (1)**

A didactic course on the development of the occlusion, growth related imbalances, and interceptive treatment. Discussions include psychological handling of younger patients, pros and cons of early intervention, early decisions to preserve spaces and pertinent literature review. (Offered every year.)

**ORTH.585 Diagnostic Seminars on Adult & Interdisciplinary Treatment (2)**

A didactic course on the philosophy and special considerations of adult and interdisciplinary treatment. This course focuses on diagnosis, treatment planning, criteria for treatment, special mechanics and special attention to the interaction among the different specialties. (Offered every year.)

**ORTH.589 Review for the ABO Examination (0)**

The second year students attend a series of seminars with various members of the faculty toward preparation for the phase two, written examination administered periodically by the American Board of Orthodontics. Passing the examination is a required step toward board certification. (Offered every year.)

**ORTH.591 Literature Review (1)**

A consideration of recent developments and current literature in the orthodontic field and in related fields. (Offered each semester.)

**ORTH.595 Special Study for Examinations (0)**

**ORTH.597 Research Topics (1-2)**

Prior permission of guiding professor and program director required.

**ORTH.599 Thesis Research (0-6)**

## PERIODONTICS (CADE)

**D. Douglas Miley, D.M.D., M.S.D.,**

*Program Director*

The 36-month graduate program in Periodontics, offered by the Center for Advanced Dental Education, leads to the Master of Science in Dentistry (Research) degree. Didactic and clinical education in graduate periodontics occurs at the host institution, Saint Louis University, as well as at an affiliate institution, Southern Illinois University School of Dental Medicine, Alton, Illinois. Focus of the training program is three-fold: an extensive and comprehensive clinical experience involving diagnosis and treatment of patients representing a wide variety of periodontal problems; the didactic component that encompasses the biomedical sciences as well as clinical concepts; and research related to the study of periodontology. The program is fully accredited by the Commission on Dental Accreditation of the American Dental Association. Following completion of the program, graduates are educationally qualified for certification by the American Board of Periodontology.

## Master of Science in Dentistry (Research)

**Prerequisites**

D.D.S., D.M.D., or equivalent general dental degree.

**Required Courses**

All CADE core courses described within the section entitled Center for Advanced Dental Education except CAD.511, CAD.523, and CAD.524. In addition, required periodontal specialty courses include all courses described below.

**Additional Requirements**

Supervised clinical periodontal treatment of patients; comprehensive periodontal specialty examinations utilizing written, oral, and practical clinical formats; teaching practicum; oral defense of the thesis. Total required credit-hours: 62.

*No formal minor is permitted.*

**COURSE DESCRIPTIONS****Graduate Courses****PERI.500 Principles of Periodontics (1)**

An overview of critical didactic and clinical information in the field of periodontology to the incoming periodontal resident. (Offered every year.)

**PERI.501 Periodontal Literature Reviews I (1)**

A format for reviewing and presenting significant classical and contemporary periodontal literature published in related journals. (Offered every semester.)

**PERI.502 Periodontal Literature Reviews II (1)****PERI.503 Periodontal Literature Reviews III (1)****PERI.504 Periodontal Literature Reviews IV (1)****PERI.505 Periodontal Literature Reviews V (1)****PERI.506 Periodontal Literature Reviews VI (1)****PERI.510 Conscious Sedation I (1)**

Course is designed to provide knowledge required to manage pain and anxiety in the conscious, sedated patient and training in the various sedation techniques. (Offered every year.)

**PERI.511 Conscious Sedation II (1)**

Continuation of PERI.510. (Offered every year.)

**PERI.520 Introduction to Graduate Implant Dentistry I (1)**

A comprehensive course to prepare knowledge necessary for clinical dental implant treatment; all phases of surgical and prosthetic treatment are discussed. (Offered every year.)

**PERI.521 Introduction to Graduate Implant Dentistry II (1)**

Continuation of PERI.520. (Offered every year.)

**PERI.522 Advanced Implant Surgery I (1)**

A comprehensive overview of implant dentistry, with an emphasis on surgical methods and techniques. Special topics are presented and current literature is reviewed. (Offered every year.)

**PERI.523 Advanced Implant Surgery II (1)**

Continuation of PERI.522. (Offered every year.)

**PERI.530 Clinical Teaching Practicum (0)**

Supervised participation in the instruction of clinical periodontics to undergraduate dental students and participation with faculty in the development of treatment plans for new patients. (Offered every year.)

**PERI.540 Periodontal Case Presentation Seminar (1)**

Resident presentations of patient treatment for critical review and discussion. Residents organize clinical case information and records for presentations of patient diagnosis, treatment planning, and surgical therapy. Gives each resident the opportunity to observe and evaluate periodontal treatment by other residents and provides a basis of preparation for the American Board of Periodontology oral examination. (Offered every academic term.)

**PERI.560 Clinical Periodontics I (1)**

Clinical course consisting of patient treatment for periodontal diseases and other associated conditions in the field of periodontics. Students treat patients with various periodontal diseases to a level that periodontal health is achieved, etiologic factors are controlled, and a schedule for supportive periodontal therapy is organized for patients. The clinical experience also consists of dental implant treatment and other adjunctive methods in the management of patients referred for periodontal treatment. (Offered every academic term.)

**PERI.561 Clinical Periodontics II (2)****PERI.562 Clinical Periodontics III (2)****PERI.563 Clinical Periodontics IV (1)****PERI.564 Clinical Periodontics V (2)****PERI.565 Clinical Periodontics VI (2)****PERI.566 Clinical Periodontics VII (1)****PERI.567 Clinical Periodontics VIII (2)****PERI.568 Clinical Periodontics IX (2)**

**PERI.570 Periodontal Systemic Interrelationships (0)**

Explores the complex interaction between oral and systemic health. Evidence shows that a number of human diseases are associated with opportunistic infections in periodontal medicine. These diseases are discussed together with the oral manifestations and management. (Offered every year.)

**PERI.580 Orthodontic-Periodontic Interrelationships (0)**

Designed to explore the interrelationships between the disciplines of orthodontics and periodontics. In-depth discussion of special topics to improve patient treatment of interdisciplinary problems in clinical practice. (Offered every year.)

**PERI.591 Current Literature in Periodontics (1)**

An ongoing review of current literature in periodontics taken from various journals. Residents present abstracts and review articles. Critical evaluations are made of current published research, and new concepts and techniques are discussed in a seminar format. (Offered every semester.)

**PERI.595 Special Study for Examinations (0)****PERI.599 Thesis Research (0-6)****PERI.5CR.90 Master's Degree Study (0)**

# Health Care Ethics

**Jeffrey P. Bishop, MD, PhD.**

*Center Director and Department Chair*

## PhD Program in Health Care Ethics

The PhD program presents an integrated, interdisciplinary curriculum in Health Care Ethics that prepares students to work as scholars, clinicians, and corporate ethicists. Students may tailor aspects of their coursework and their dissertation research to focus on biotechnological, clinical, organizational, or research ethics. Students pursuing the JD/PhD, MD/PhD, or the MA/PhD follow a modified curriculum. Students entering the PhD program from baccalaureate studies pursue additional coursework as described below.

### COURSEWORK

Students who have completed a Masters degree or another advanced degree (e.g., a JD or MD) complete 48 hours of coursework as described in this section. Students entering the PhD program directly from baccalaureate studies complete an additional 12 credit hours of coursework, as described in the following section. Students pursuing the JD/PhD or the MD/PhD complete a modified version of the Masters-level PhD program curriculum described here.

Students register for courses in five areas: Foundations, Context of Health Care, Topics and Scholars, Practica, and Dissertation Research.

### Foundations of Health Care Ethics (12 hours)

The Foundations courses establish the research competencies required for the scholarly analysis of health care ethics. These required courses examine philosophical (HCE-601), religious (HCE-602), and interdisciplinary (HCE-604) methods in health care ethics. Additionally, student are required to

complete 1 of the following 3 foundations courses: HCE-605 Philosophical Foundations in Ethics, HCE-606 Psychosocial Foundations in Ethics, HCE-607 Foundations of Catholic Morality.

### Context of Health Care (12 hours)

Five Context courses are required: Medicine for Ethicists (HCE-611, 1 credit), Health Care Law (HCE-612, 3 credits), and Bioethics and the Law (HCE-660, 2 credits), HCE-618 Clinical Ethics, HCE-639 Research Ethics, and HCE-641 Practicum. These courses provide practical knowledge and skills relevant to the various real world contexts of health care ethics.

### Topics and Scholars in Health Care Ethics (12 hours)

Students will complete 12 credit hours of Topics and Scholars courses. Preferably some electives will be in areas related to a student's anticipated dissertation research.

### Dissertation Research (12 hours)

After passing the comprehensive examinations, students prepare a dissertation proposal and write a dissertation while registered for 12 credit hours of dissertation research (HCE-699).

### ADDITIONAL REQUIREMENTS IN THE CURRICULUM INCLUDE THE FOLLOWING:

#### Research Tools

These competencies are essential for success in health care ethics. Students may develop these competencies through different mechanisms.

1. Competency in medical terminology
2. Competency in library database skills
3. Competency in reading statistics and study design

#### Comprehensive Examinations

The comprehensive examinations occur after completing all course work and practica. For more information about comprehensive examinations, go to [http://bioethics.slu.edu/PhD\\_Comp\\_Exams](http://bioethics.slu.edu/PhD_Comp_Exams). You may 'click' on the website listed above or on the highlighted 'comprehensive examinations' text to link directly to the relevant web page.

#### Dissertation Proposal

After passing the oral and written comprehensive examinations, students prepare a formal dissertation proposal. The dissertation proposal is a distinct requirement of the program and it must be approved in writing by all members of the dissertation committee and the Center Director. In their dissertation proposals, PhD candidates must present substantial evidence of their ability to extend the knowledge base in the major field and demonstrate how the research competencies in

the program are to be integrated with the proposed research of the dissertation.

### **Oral Defense of the Dissertation**

Upon completion of the dissertation, students publicly present and defend their dissertation before their dissertation committee, CHCE faculty and doctoral students.

### **ADDITIONAL COURSEWORK REQUIREMENT FOR STUDENTS ENTERING DIRECTLY FROM BACCALAUREATE STUDIES**

Students entering the PhD Program directly from baccalaureate studies additionally complete 12 hours of coursework.

**HCE-605: Philosophical Foundations of Ethics** (3 credits)- or an equivalent 3-credit hour graduate-level foundations of ethics course

**HCE-606: Psychosocial Foundations in Ethics**-or a suitable 3-credit hour graduate-level applied ethics course available in another department

**HCE-607 Catholic Foundations of Morality**-or a suitable 3-credit hour graduate-level applied ethics course available in another department

**CMHC-502: Ethical Issues in Public Health**-or a suitable 3-credit hour graduate-level applied ethics course as available in another department

And **1 upper level ethics elective** either within HCE or another department.

*Note: This lists 5 courses; however, one of the first 3 courses listed is required as a selective for all PhD students and does not count toward the additional 12 hrs. required.*

### **JD/PHD CURRICULUM**

Students begin their dual degree studies at the School of Law as traditional first-year students. In their second and third years of study, students are primarily law students but take six hours of courses at the Center for Health Care Ethics. In addition to the six hours at the CHCE, students enroll in a three-hour directed research course that is cross-listed by both programs. The directed research project is supervised by faculty from both programs and is treated as a traditional law school directed research project.

Dual degree students ordinarily graduate with the JD in three years of full-time study. It is recommended that they sit the bar exam in the summer following their graduation.

Beginning in the fall following their graduation from the School of Law, all academic work is dedicated to the PhD program. The PhD program recognizes 9 hours of law school courses towards the PhD. (See details below.) Additionally, students will have completed 9 hours of Health Care Ethics classes during the JD program. Thus it is expected that

students will complete their PhD coursework in two semesters following their JD program. Comprehensive exams and the dissertation ordinarily require an additional three semesters.

During the entire time that students are enrolled in the dual degree program, it is expected that they will be engaged in both programs. Starting with their second year of law school, students will take part in PhD seminars and other extracurricular programs offered by the doctoral program. Once they have completed their JD and are enrolled in the doctoral program, it is expected that they will remain engaged in relevant health law activities at the School of Law.

### **CURRICULAR DETAIL**

Students complete the usual curriculum in both the Juris Doctor (JD) and PhD programs. However, as indicated below, 18 credit hours of coursework satisfies requirements in both of the dual degree programs.

#### **Law Courses Counted Toward PhD Degree (7 credits)**

**LAW-757:** Health Care Law [3 credits; replaces Topics and Scholars Elective]

**LAW-758:** Bioethics and the Law [2 credits; Context Requirement.]

**LAW-86H22:** Research Ethics [2 credits; replaces HCE 639 Research Ethics]

#### **PhD Courses Counted Toward JD Degree (9 credits)**

**HCE-653:** Directed Research in Health Law and Ethics [Cross listed with LAW-885: Directed Research (3)] [Required]

#### **Plus two of the following five additional PhD courses:**

**HCE-604:** Interdisciplinary Research in Health Care Ethics (3)

**HCE-605:** Philosophical Foundations of Ethics (3)

**HCE-606:** Psychosocial Foundations in Ethics (3)

**HCE-607:** Catholic Foundations of Morality (3)

**HCE-634:** Health Care Reform (3)

*\* Note: Dual degree students complete the Masters-level PhD program track, not the more extensive BA-level track.*

### **MD/PHD CURRICULUM**

Students begin their dual degree studies as traditional first year students in the School of Medicine. After the second year of medical school, students begin full-time study in Health Care Ethics. Students are expected to complete the PhD in three years, after which they return to the School of Medicine to complete the third and fourth years of medical studies.

A minimum of 48 hours of coursework is required for the PhD. This ordinarily includes 33 hours of course work, three hours of practicum, and 12 hours of dissertation research. CHCE accepts 7 credit hours from Phase 1 and Phase 2 of the MD curriculum. The required courses HCE-611 Introduction to Medicine for Ethicists, one 3-credit Topics and Scholars elective and the HCE-641 Practica are waived based on medical school coursework in Patient, Physician, and Society I and II, and in Fundamentals of Biomedical Science. MD/PhD students will be recognized as having satisfied all three Research Tools requirements based on trainee knowledge of medical terminology, biostatistics, and library database searches. The remaining 27 credit hours of PhD coursework, comprehensive exams, the dissertation, and the public defense of the dissertation must be completed during the three years of PhD study.

*\* Note: Dual degree students complete the Masters-level PhD program track, not the more extensive BA-level track.*

### MA/PHD CURRICULUM

Ordinarily, students begin their MA studies at Aquinas Institute of Theology (AIT) during their first year of the program. In year 1, students will complete 30\* hours of 36 hours required for the MA from AIT:

- 6 credits Biblical Studies
- 3 credits Historical Studies
- 12 credits Systematic Theology
- 9 credits Moral Theology

During the second year, students enter the PhD program at SLU and follow the PhD curriculum for students who already hold Masters degrees. In Year 2, dual degree students become eligible for assistantship funding. AIT will count 6 credits from the PhD coursework completed in Year 2 toward completion of the MA. The following PhD courses may be used to fulfill the final 6 credits toward the MA:

- HCE 602 (Religious Methods in Health Care Ethics) or HCE 631 (Health Care Ethics in the Catholic Tradition) [Dual degree students must enroll in both of these courses during their time in the Ph.D. program. Completion of 1 of the courses is required for completion of the M.A. These courses are offered in alternating spring semesters. Therefore, students will complete only one of them in Year 2 of the dual degree program.]

- A 3 credit elective in HCE

\* A total of 6 credits taken toward the MA at AIT will count towards fulfillment of the Topics and Scholars elective requirements in the Ph.D. program. Two of the following MA courses may be treated as Topics and Scholars electives for the PhD:

- Justice and Catholic Social Teaching
- Ethics of Human Sexuality

- Christian Anthropology

(Any substitutions to these courses must be approved by the MA advisor and the Center Director.)

After the end of Year 2 and completion of the major paper and comprehensive exams required for the MA degree, students are awarded the MA in Theology from AIT. The timing for completion of the major paper and the comprehensive exams is to be determined in consultation with the MA advisor at AIT.

In Year 3, students complete the coursework required for the PhD.

### CERTIFICATE OF EMPIRICAL RESEARCH METHODS IN BIOETHICS

Students, with the approval of the program's faculty, may opt to complete this certificate program. The certificate program, which has two distinct tracks (qualitative and quantitative), requires 15 hours of coursework, some of which can be integrated into the traditional PhD program. The aim of the certificate program is to prepare students to do independent research based either on survey (quantitative) or on interview (qualitative) methods. Data gathered during the final courses of the certificate program should be integrated into the doctoral dissertation in health care ethics. For further detail, see section 1.B.

### PHD CONCENTRATION IN RESEARCH ETHICS

Students enrolled in the PhD program in health care ethics may take 15 hours of coursework with an emphasis on research ethics and write a dissertation (12 credits) in research ethics to develop expertise in the area of human research ethics. The concentration requirements are outlined below:

- **HCE-603 (3 credits): Applied Methods in Health Care Ethics or HCE-604 (3 credits): Interdisciplinary Research in Health Care Ethics**

Concentration students will focus their paper in the area of human subjects research. [Note: Both courses are required for the PhD program. Students in the Human Research concentration would be required to focus on research ethics in at least one of the two classes.]

- **HCE-639 (3 credits): Research Ethics**

- **HCE-698 (3 credits)**

Students will complete at least one directed reading course in research ethics.

- **Elective in Research Methodology (3 credits)**

Concentration students would be required to take a class in research methodology or would be required to demonstrate advanced standing in this area. [Note: This will be treated as one of the Topics and Scholars electives required as part of the PhD program.]

- **Practicum (3 credits)**

Students will complete their practicum in the area of human subjects research.

- **Dissertation (12 credits)**

Students will write a dissertation in research ethics.

## PHD CONCENTRATION IN CATHOLIC TRADITION

Students enrolled in the PhD program in health care ethics may take 15 hours of coursework with an emphasis on health care ethics in the Catholic tradition and write a dissertation (12 credits) in the Catholic tradition to develop expertise in the area of Catholic health care ethics. *Note:* The Catholic Health Association has recommended that ethicists working in Catholic health care with an interdisciplinary PhD degree should additionally hold an MA in theology. We strongly recommend that students who do not already hold an MA in theology complete our dual degree program, offered in collaboration with the Aquinas Institute of Theology. Alternately, students should plan on completing an MA prior to commencing work in Catholic health care. The concentration requirements are outlined below.

As a prerequisite, students must complete HCE-607 Foundations of Catholic Morality or demonstrate that they have completed an equivalent course at the 500 or 600 level.

- **HCE-602 (3 credits): Religious Methods in Health Care Ethics**

Concentration students will focus their paper and receive special mentoring in the Catholic tradition.

- **HCE-631 (3 credits): Health Care Ethics in the Catholic Tradition**

- **HCE-698 (3 credits): Graduate Reading Course**

Students will complete at least one directed reading course on the Catholic tradition in health care ethics.

- **Elective related to Health Care and the Catholic Tradition (3 credits)**

Concentration students would be required to take a course in an area relevant to health care and the Catholic tradition. [Note: This will be treated as one of the Topics and Scholars electives required as part of the PhD program.]

- **Practicum (3 credits)**

Students will complete a practicum in Catholic health care.

- **Dissertation (12 credits)** Students will write a dissertation on health care ethics in the Catholic Tradition.

## COURSE DESCRIPTIONS

Please refer to the CHCE website for course descriptions: [http://bioethics.slu.edu/PhD\\_Course\\_Descriptions.html](http://bioethics.slu.edu/PhD_Course_Descriptions.html)

Curriculum: Certificate of Empirical Research Methods

## CERTIFICATE OF EMPIRICAL RESEARCH METHODS IN BIOETHICS

### PROGRAM DESCRIPTION AND GUIDELINES

#### PROGRAM OVERVIEW

Students enrolled in the PhD Program in Health Care Ethics may opt to complete a Certificate of Empirical Research Methods in Bioethics. The PhD Program was designed to produce graduates who are competent in *normative* health care ethics. Completion of a Certificate is meant to indicate special research competencies over and above those gained in the PhD program. These specific competencies pertain to empirical research in the field of bioethics.

The Certificate Program has two tracks: Quantitative and Qualitative. Both tracks require the completion of 15 hours of coursework.

**Integration of Certificate and PhD Coursework.** Some Certificate courses will satisfy PhD Program course requirements. These substitutions were carefully considered so as not to compromise competency in normative ethics or in knowledge of the context of health care. Because there may be up to 6 credit hours of overlap, students who enter the PhD Program with the pre-requisite in inferential statistics will be required to complete only 9 additional credit hours of coursework. Students may receive up to 6 hours of advanced standing within the Certificate program for methods courses completed elsewhere.

**Integration with the PhD Program's Educational Mission.** The most significant aspect of any PhD program is dissertation research. All dissertations in the PhD Program are expected to make original contributions to normative ethics in health care. However, normative ethics must be informed by many facts, frequently by empirical facts about the values people hold, the causal factors influencing a moral situation, or the outcomes of quality improvement or educational interventions. This presents the opportunity to incorporate original empirical research into dissertations in normative ethics.

The capstone course for the Certificate, HCE652 Directed Empirical Research in Bioethics, requires students to gather original data that will be incorporated into the doctoral dissertation. The course will provide students with the mentoring necessary to integrate this data into the doctoral dissertation proposal in a way that is sensitive to the interdisciplinary nature of this endeavor.

#### COURSE OF STUDIES FOR THE QUALITATIVE TRACK

*Note: In square brackets substituted CHCE PhD courses are indicated.*

**SOC-560 Research Methodology** (or equivalent, such as SW-S775, Social Work Research).

**SOC-580 Survey Research Methods** [Topics and Scholars Elective]

**NR-N610 Qualitative Methods in Nursing Research** (or an equivalent graduate level, introduction to qualitative methods course, such as SW-S776)

**A suitable course on Intermediate Qualitative Research**

**HCE-652 Directed Empirical Research in Bioethics** [Topics requirement]

### **COURSE OF STUDIES FOR THE QUANTITATIVE CERTIFICATE**

*Note: In square brackets substituted CHCE PhD courses are indicated.*

**SOC-560 Research Methodology** (or equivalent, such as SW-S775, Social Work Research).

**SOC-580 Survey Research Methods** [Topics and Scholars Elective]

**PSY-625 Analysis of Variance and Experimental Design**

**PSY-650 Multivariate Statistical Analysis**

**HCE-652 Directed Empirical Research in Bioethics** [Topics requirement]

As most courses build upon each other, course work is ordinarily to be completed in the order indicated above.

### **ADVANCED STANDING AND RESIDENCY REQUIREMENTS**

Courses in research methods may not be transferred. However, students who have completed graduate level courses in research methods may apply for advanced standing in the certificate program (effectively having some requirements waived in lieu of previous coursework). The student will be required to provide the CHCE Certificate Program Director with a copy of his or her transcripts and a copy of the syllabus of all courses for which recognition is sought. If the Certificate Program Director considers the student to have met some of the certificate course requirements, the student will then petition the Center Director for advanced standing.

At a minimum, students must complete at Saint Louis University HCE-652 plus two other 3-credit hour graduate level courses in research methods. Substitutions may be made in order to avoid duplication of coursework.

### **UPON SUCCESSFUL COMPLETION OF CERTIFICATE COURSEWORK**

Certificates will be awarded upon successful completion of all coursework. Students' transcripts will indicate the Certificate

courses completed. The Center for Health Care Ethics will issue the physical Certificate, which will indicate which of the two Tracks was completed. The Certificate will be signed by the Certificate Director and the Center Director.

### **DISSERTATIONS INCORPORATING ORIGINAL EMPIRICAL RESEARCH**

(See policy under section on dissertations.)

### **CERTIFICATE OF EMPIRICAL RESEARCH METHODS IN BIOETHICS PETITION TO PURSUE A CERTIFICATE WITHIN A DEGREE PROGRAM**

Graduate Education form is available online at:

<http://www.slu.edu/Documents/graduate/PursueCertWithinGradProgramIA.pdf>

Admissions: Prerequisites

### **PREREQUISITES FOR ADMISSION TO PHD PROGRAM THROUGH THE POSTGRADUATE TRACK**

Students must have completed a Master's degree in a field relevant to health care ethics or a professional degree in a field of health care or law. Ordinarily, students whose Master's level curriculum did not include the following items will need to complete additional prerequisite course work to satisfy the following items:

1. Foundations in Philosophical Ethics (graduate-level, 3 credit hours).
2. Applied Ethics (graduate-level, 3 credit hours).
3. Logic or Critical Thinking (undergrad/graduate, 3 credit hours).
4. MA thesis in ethics or six credit hours of humanities studies which included essays.

### **PREREQUISITES FOR ADMISSION TO PHD PROGRAM THROUGH THE POST-BACCALAUREATE TRACK**

Post-baccalaureate: Applicants are required to possess a bachelor's degree with a major or a minor in a field related to ethics in the humanities (e.g., philosophy or religious studies) and their writing sample and statement of aims must evidence the maturity needed to complete a PhD in health care ethics. Basic competencies in philosophical and applied ethics are developed within the doctoral curriculum.

### **PREREQUISITES FOR ADMISSION TO PHD PROGRAM THROUGH THE JD/PhD PROGRAM**

Ordinarily, JD/PhD students are required to satisfy the same prerequisites as students admitted to the PhD program on the postgraduate admission track.



## PREREQUISITES FOR ADMISSION TO PHD PROGRAM THROUGH THE MD/PhD PROGRAM

MD/PhD students must have completed a graduate level foundations of ethics course and applied ethics course. Students may satisfy these requirements as directed reading courses during the summer between the first and second years of medical school. Applicants to the health care ethics program must provide a sample of writing in health care ethics that demonstrates the ability to do doctoral level coursework in the field.

# NUTRITION AND DIETETICS

### **Mildred Mattfeldt-Beman, Ph.D.**

*Department Chairperson*

*Coordinator of Medical Dietetics Option*

### **Karen Steitz, M.S.**

*Dietetic Internship Director*

### **Steven Jenkins, Chef**

*Coordinator of Culinary Arts Option*

### **Edward Weiss, Ph.D.**

*Coordinator of Nutrition and Physical Performance Option*

### **Lori Jones, M.S., M.P.H.**

*Coordinator of dual M.S./M.P.H. Option*

The Department of Nutrition and Dietetics offers a dietetic internship program and graduate programs leading to the Master of Science in Nutrition and Dietetics degree. All interns register as graduate students, and twelve credit hours of graduate courses are incorporated into the internship. Upon completion of the internship, students are eligible to sit for the national registration exam.

Medical Dietetics, Culinary Arts, and Nutrition and Physical Performance are available as areas of concentration in the Master's Program. Students in the Culinary specialty area complete a one-semester, 20-hour-per-week practicum arranged to provide experience in sustainable food systems, culinary and entrepreneurship, as well as research.

Students in the Nutrition and Physical Performance specialty area complete a one semester, 20-hour-per-week practicum arranged to provide experience in exercise/nutrition testing and measurement as well as research.

The Department, in conjunction with the School of Public Health, also offers a dual M.S. in Nutrition and Dietetics/M.P.H. degree program.

Students in the dual Master of Science in Nutrition and Dietetics/ M.P.H. program take the core courses from each of the two programs to provide a solid base in both fields. The

total credit-hour requirement is 53. Each student will complete a one-semester, 20-hour per-week practicum in an area combining dietetics and public health designed to strengthen the student's area of primary interest as well as research. Graduates are prepared to conduct health promotion programs, provide nutrition care and counseling, formulate specific dietary plans, participate in food systems management, and may engage in biochemical and nutrition research in universities and in industry.

## Dietetic Internship

### **Prerequisite**

B.S. degree in dietetics or related area of study with certification of completion of the didactic program requirements (DPD) of the American Dietetic Association.

### **Required Courses**

DIET.510 Human Nutrition in Physiology and Metabolism I;

DIET.513 Human Nutrition in Physiology and Metabolism II;

DIET.530 Community Nutrition;

DIET.XXX Emphasis Specific Elective.

### **Additional Requirements**

DIET.578 Applied Education in Dietetics I;

DIET.579 Applied Education in Dietetics II;

DIET.594 Dietetic Internship (two semesters).

## Master of Science in Nutrition and Dietetics

### **Prerequisites**

B.S. degree in Dietetics or related area of study, Biochemistry, Basic Nutrition, Advanced Nutrition, Medical Nutrition Therapy, Nutrition in the Life Cycle, and Inferential Statistics or equivalent.

### **Additional Prerequisites for Culinary Arts Option**

Human Physiology and Community Nutrition.

### **Additional Prerequisites for Nutrition and Physical Performance Option**

Human Anatomy; Human Physiology; and Community Nutrition.

## Medical Dietetics Option

### **Required Courses**

HMP.500 Health Care Organization;

DIET.510 Human Nutrition in Physiology and Metabolism I;

DIET.511 Nutritional Assessment;

DIET.513 Human Nutrition in Physiology and Metabolism II;

DIET.535 Clinical Systems Management;

DIET. 555 Nutrition Counseling;;

ORES.512 or SOC.610 Advanced Statistics;  
 SOC.560 or HSR.510 Research Methodology;  
 DIET.588 Seminar in Dietetics Research;  
 DIET.589 Special Problems in Dietetics.  
 Nine credit-hours selected from  
 DIET.503 Sustainable Food Systems  
 DIET.507 Culinary and Medicinal Herbs;  
 DIET.521 Pediatric Nutrition;  
 DIET.522 Gerontological Nutrition;  
 DIET.530 Community Nutrition;  
 DIET.540 Nutrition Education;  
 DIET.550 Nutrition and Physical Performance;  
 DIET.560 Current Research in Vitamins;  
 DIET.565 Current Research in Minerals.

*A formal minor is permitted.*

## Culinary Arts Option

### Required Courses

DIET.503 Sustainable Food Systems;  
 DIET.510 Human Nutrition in Physiology and Metabolism I;  
 DIET.513 Human Nutrition in Physiology and Metabolism II;  
 DIET.535 Clinical Systems Management;  
 DIET.588 Seminar in Dietetics Research;  
 DIET.589 Special Problems in Dietetics;  
 DIET.590 Culinary Practicum;  
 ORES.512 or SOC.610 Advanced Statistics;  
 SOC.560 or HSR.510 Research Methodology;  
 MGT.620 New Venture Initiation or  
 MGT.623 Corporate Entrepreneurship;  
 MGT.621 Advanced Business Planning for New Ventures;  
 ACT.501, MKT.600, or approved course.  
 Three credit-hours selected from  
 DIET.575 Gastronomy;  
 DIET.5XX Sustainable Cooking in Tuscany;  
 DIET.5XX Creating Sustainable American Cuisine.

*A formal minor is permitted.*

## Nutrition and Physical Performance Option

### Required Courses

DIET.510 Human Nutrition in Physiology and Metabolism I;  
 DIET.511 Nutritional Assessment;  
 DIET.513 Human Nutrition in Physiology and Metabolism II;  
 DIET.540 Nutrition Education;  
 DIET.550 Nutrition and Physical Performance;  
 DIET.570 Aspects of Prevention and Rehabilitation of Sports and Exercise Injury;  
 DIET.580 Cardiovascular and Metabolic Physiology;

DIET.581 Practical Aspects of Cardiovascular Fitness and Rehabilitation Practicum;  
 DPT.414 or BIOL.546 Exercise Physiology;  
 SOC.560 or HSR.510 Research Methodology;  
 DIET.588 Seminar in Dietetics Research;  
 DIET.589-02 Special Problems in Dietetics. Three credit-hours selected from  
 HMP.500 Health Care Organization;  
 DIET.503 Sustainable Food Systems;  
 DIET.507 Culinary and Medicinal Herbs;  
 DIET.521 Pediatric Nutrition;  
 DIET.522 Gerontological Nutrition;  
 DIET.535 Clinical Systems Management;  
 DIET.555 Nutrition Counseling;  
 DIET.560 Current Research in Vitamins;  
 DIET.565 Current Research in Minerals.

*A formal minor is permitted.*

## Master of Science in Nutrition/M.P.H. Dual Degree Program

### Required Courses

DIET.510 Human Nutrition in Physiology and Metabolism I;  
 DIET.511 Nutritional Assessment;  
 DIET.513 Human Nutrition in Physiology and Metabolism II;  
 DIET.530 Community Nutrition;  
 DIET.540 Nutrition Education;  
 DIET.545 Patient/Client Nutrition Management Practicum;  
 DIET.588 Seminar in Dietetics Research.  
 Three credit-hours selected from  
 DIET.521 Pediatric Nutrition;  
 DIET.522 Gerontological Nutrition.

### Additional Requirements

Core courses for M.P.H. program;

## Program Accreditation

The Saint Louis University Dietetic Internship is accredited by the Commission on Accreditation for Dietetics Education of the American Dietetic Association, 120 South Riverside Plaza, Suite 2000, Chicago, IL, 60606-6995, 312-899-5400

### COURSE DESCRIPTIONS

#### Upper-Division Course

##### DIET.489: Independent Study (0-3)

Qualified students interested in doing work in specific areas of dietetics or wishing to amplify their knowledge of dietetics may pursue an individualized course of study. Department approval is required. Prerequisites: To be determined individually.

#### Graduate Courses

**DIET.503 Sustainable Food Systems (3)**

Course provides students with a clear perspective on the principles, history, and practices of sustainable food systems in local and global communities. Components of a food system are discussed from the perspectives of the producer, processor, distributor, consumer, waste manager, and policy advocate. Students interview a farmer to ascertain the challenges as well as the rewards of producing food for consumers. (Offered every Spring semester.)

**DIET.507 Culinary and Medicinal Herbs (3)**

Prerequisite: Advanced Nutrition. Course will be divided into three sections. The first section will include techniques for the identification of the most common classifications of herbs, as well as a history of their uses. This section will focus on the culinary properties of herbs. The second section will focus on medicinal herbs with an evaluation of the indications for use, side effects, and drug/herb interactions. The third section is integrated laboratory experiences throughout the course, including culinary and medicinal preparations and herb garden design and planting. (Offered every Spring semester.)

**DIET.510 Human Nutrition in Physiology and Metabolism I (3)**

Prerequisites: Advanced Nutrition, Medical Nutrition Therapy I and II. Course examines the role of nutrition in human metabolism and physiology with primary consideration of regulatory mechanisms; relationships appraised in both health and disease; emphasis on current research in evidence based nutrition care intervention. (Offered every Fall semester.)

**DIET.511 Nutritional Assessment (3)**

Prerequisite or Co-requisite: DIET 513 I. Systematic study of assessment methodologies and their applications in institutional and community settings; current research innovations as well as pragmatic approaches are detailed. (Offered every Fall and Spring semester.)

**DIET.513 Human Nutrition in Physiology and Metabolism II (3)**

Prerequisites: DIET 510. Continuation of DIET.510. Course examines the role of nutrition in human metabolism and physiology with primary consideration of regulatory mechanisms; relationships appraised in both health and disease; emphasis on current research in evident based nutrition care intervention. (Offered every Spring semester.)

**DIET.521 Pediatric Nutrition (3)**

Prerequisite: DIET.510. In-depth examination of the normal nutritional requirements for fetal development through adolescence in regard to normal physiological and psychological growth and the pathophysiologies specific to abnormal growth patterns. Evidence based nutrition intervention in chronic diseases and nutrition support of the critically ill child will comprise the second half of the semester. Based on review of recent research. (Offered every Spring semester.)

**DIET.522 Gerontological Nutrition (3)**

Prerequisite: Medical Nutrition Therapy II. In-depth exploration of the physiological, psychological and social aspects of nutritional needs during the aging process; integration and application of nutritional needs to programs and support systems for the elderly. (Offered every Fall semester.)

**DIET.530 Community Nutrition (3)**

Prerequisites: Undergraduate-level Community Nutrition Course. An overview of the delivery of public health and community nutrition programs based on the core public health functions of assessment, policy development, and assurance. Current issues relating to the promotion of good nutrition and prevention health care as they relate to those core functions are examined. Students will experience doing community assessments, evaluating and developing policy, and developing grant programs to assure the health and nutrition status of a designated target population. (Offered every Spring semester.)

**DIET.535 Clinical Systems Management (3)**

Prerequisites: General management course. A systems approach to clinical nutrition services management, including the human dimensions of management, management tools and techniques for assessing accountability, quality, cost containment, productivity and marketing plans. Includes

development of a personnel and operational budget to expand nutrition services. (Offered every Fall semester.)

**DIET.540 Nutrition Education (3)**

Educational theories and principles, as applied to nutrition education, in a variety of settings. Students will design materials, become familiar with various types of media, and demonstrate skills learned. Review of recent research. (Offered every Fall semester.)

**DIET.545 Patient/Client Nutrition Management Practicum (3)**

Field experience in patient/client nutritional management at various sites under professional supervision (20 hours per week). Research component and publication in referred journal or pilot study used in grant application required as part of practicum. Practice experience carried concurrently with theory. (Offered every semester.)

**DIET.550 Nutrition and Physical Performance (3)**

Prerequisite: Human Physiology, Advanced Nutrition, or Exercise Physiology. Examination of metabolism and nutritional requirements associated with the performance of exercise. Emphasis on maximizing physical performance through nutrition. Includes in-depth coverage of nutrient quantities and qualities and the timing of nutrient consumption as they relate to exercise performance and training adaptations. (Offered every Spring semester.)

**DIET.555 Nutrition Counseling (3)**

Prerequisites: Nutrition in the Lifecycle and Medical Nutrition Therapy II. Course incorporates the application of communication skills, interviewing techniques, assessment, motivational interviewing, and counseling theories to the nutrition counseling of individuals. Lab included. (Offered Fall and Spring semesters.)

**DIET.560 Current Research in Vitamins (3)**

Prerequisites: Biochemistry and Advanced Nutrition. Update on the latest research on vitamins; requirements, deficiencies, and toxicities in humans. Focus on current literature. (Offered every Fall or Summer semester.)

**DIET.565 Current Research in Minerals (3)**

Prerequisites: Biochemistry and Advanced Nutrition. Update on the latest research on minerals; requirements, deficiencies, and toxicities in humans. Focus on current literature. (Offered every Spring or Summer semester.)

**DIET.570 Exercise Testing and Prescription (3)**

Prerequisite: CPR certification. Prerequisite or co-requisite: Human Anatomy and Physiology, Exercise Physiology. An introduction to physical fitness assessment and exercise prescription with a focus on preparation for the American College of Sports Medicine Health and Fitness Instructor Certification. Includes assessment methods for cardiovascular and muscular fitness, body composition and flexibility, and an examination of the principles for prescribing cardiovascular, strength, and flexibility exercise. Also addresses emergency procedures and planning, risk stratification, and special needs for pediatric, pregnant, and older individuals. Includes a practicum laboratory. (Offered every Fall semester.)

**DIET.575 Gastronomy (3)**

Gastronomy is the study of the relationship between food and culture. Food is an expression of culture but how we experience that food also creates culture. How, when, and where we eat shape our lives and create the experience of living within a particular culture. With this perspective in mind, we will delve into the relationship between various cultures and their distinct cuisines. The class will examine the history of a culture and the development and evolution of the distinct cuisine that arose within that context. As we face increasing homogeneity in world cultures and cuisines due to globalization and the spread of western pop culture, how can distinct ingredients, cuisines, techniques, and flavor profiles remain vital and preserved? How does the concept of 'terroir' extend beyond wines to include a culture's cuisine? We will also look at food taboos around the world: cultural and religious. How did these taboos develop, what are the modern forms/incarnations of those taboos, and what purpose do they serve? (Offered every Fall semester.)

**DIET.578 Applied Education in Dietetics I (0-1)**

Prerequisite: Dietetic intern. Interns write and publish a newsletter for health-care professionals; prepare and conduct adult education, including cooking demonstrations, and nutrition-education for K-8<sup>th</sup> grade elementary school children. (Offered every Fall semester.)

**DIET.579 Applied Education in Dietetics II (0-1)**

Prerequisite: Dietetic intern. Continuation of DIET.578. Interns write and publish a newsletter for health-care professionals; prepare and conduct adult education, including cooking demonstrations, and nutrition-education for K-8<sup>th</sup> grade elementary school children. (Offered every Spring.)

**DIET.580 Cardiovascular and Metabolic Aspects of Exercise Physiology (3)**

Prerequisite: Applied Exercise Physiology. Examines the responses of the cardiovascular and metabolic systems to acute and chronic exposure to exercise. The cardiovascular component of the course focuses on oxygen transport, hemodynamics, and electrophysiology. The metabolism portion of the course focuses on the regulation of macronutrient metabolism to meet the energy needs of the skeletal muscle during exercise. (Offered every Summer or Fall semester.)

**DIET.581 Practical Aspects of Exercise Testing and Prescription (1-3)**

A total of 320 hours (20 hours per week) of applied experiences in a variety of on- and off-site settings for the purpose of developing the knowledge, skills and abilities of a certified health and fitness instructor. Practical experiences include physical fitness assessment, development and modification of exercise prescriptions, and monitoring of exercise training sessions. May include experiences in exercise physiology research, cardiac rehabilitation, recreation and wellness programs, and athletics. For majors only. Independently designed with instructor. (Offered every semester.)

**DIET.588 Seminar in Dietetics Research (0-1)**

Define a problem for in-depth research. Review of the research process and University and departmental requirements. (Offered every Fall and Spring semester.)

**DIET.589 Special Problems in Dietetics (0 or 3)**

Conduct in-depth research, data collection, and statistical analysis. Interpretation and discussion of results presented in written format and submitted for publication in a refereed journal. (Offered every semester.)

**DIET.590 Culinary Practicum (3)**

Prerequisites: MGT.620 or 623 and concurrent enrollment in or previously taken MGT 621. Practical entrepreneurial experience and research in culinary arts and nutrition under professional supervision with a focus on sustainability and entrepreneurship. (20 hours per week) (Offered every semester.)

**DIET.594 Dietetic Internship (0)**

Required of all students participating in the American Dietetic Association accredited internship.

**DIET.595 Special Study for Examinations (0)****DIET.598 Graduate Reading Course (1-3)**

Prior permission of guiding professor and department/program required.

**DIET.5CR.90 Master's Degree Study (0)**

## HEALTH INFORMATICS AND INFORMATION MANAGEMENT

**Jody Smith, Ph.D.**

*Department Chairperson*

**Jeanne Donnelly, PhD, RHIA**

*Associate Professor*

The Department of Health Informatics and Information Management offers a graduate program leading to the Master's in Health Informatics degree. The Master's in Health Informatics is a 30 credit hour, non-thesis, multidisciplinary, professional master's degree program. Graduates are prepared to assume a critical role in the development and implementation of clinical, administrative and documentation systems designed to enhance the quality of care and support decision-making in the healthcare sector. The program is designed for individuals with a strong background or interest in healthcare, computer science, information science, biomedical sciences, privacy and security of health data.

## Master's in Health Informatics

**Prerequisite**

B.S. degree in related field.

**Required Courses**

MHI.510 Medical Vocabularies

MHI.520 Introduction to Health Informatics

MHI.530 Privacy and Information Security

MHI.540 Clinical Decision Making

MHI.560 Resource Management

MHI.591 Capstone Project

ITM.605 Project Management

ITM.630 Database Management

**Six Credit-Hours Selected From**

HMP.500 Healthcare Organization

ITM.600 Managing Information Technology

ITM.610 Systems Analysis and Design

DSCI.502 Quantitative Methods/Statistics

IF.500 Informatics Foundation

IF.505 Programming and Problem Solving

**Additional Requirements**

Medical Terminology

Statistics

PC Literacy

## Program Accreditation

The Master's in Informatics program will be seeking accreditation in 2012 by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM).

**COURSE DESCRIPTIONS****Graduate Courses****MHI.510 Medical Vocabularies & Classification Systems (3)**

This survey course provides an overview of the representation of clinical data through the use of medical vocabularies and clinical classification systems. Emphasis is on developing expertise in identifying appropriate clinical classification systems and medical vocabularies, identifying their appropriate

uses and sources, and applying them within and among health information systems to promote effective communications and achieve full integration of its health information management system. (Offered every Summer)

#### **MHI.520 Introduction to Health Informatics (3)**

This course surveys the fundamental concepts and activities on information technology as applied to health care. Topics include electronic health record, knowledge-based systems, telehealth, decision support, consumer health informatics, e-Health, and the personal health record. Department-specific applications are discussed. (Offered every Spring semester.)

#### **MHI.530 Information Security (3)**

This course addresses information security from a policy perspective. The components of information security, the need for security, and the legal, ethical and social challenges of information privacy and security will be discussed. The regulatory environment, HIPAA, ARRA, privacy, security and accountability will be discussed. (Offered every summer)

#### **MHI.540 Clinical Decision Making (3)**

This course allows students to explore the history, evolution, and current applications of clinical decision support. The course emphasizes the unique challenges of clinical data representation and information retrieval techniques that are foundational to clinical decision support systems. Students will evaluate the value of clinical decision support systems in contrast with the complexities of implementation in the current medical, legal, financial, technological and cultural context. (Offered every Fall semester.)

#### **MHI.560 Resource Management (3)**

This course addresses topics such as cost analysis, justification, capital purchasing, leasing strategies, risk-sharing models, purchase agreements, contracts, corporate compliance, charge master, prospective payment systems, healthcare organization revenue cycle, and leveraging health care information to drive strategic decision making. The course will provide an overview of how health information technology relates to these business practices. Additional concepts discussed will include provider profiling, tracking utilization of resources, and quality improvement methodologies. (Offered every Spring)

#### **MHI.591 Capstone Project (3)**

All students complete a final project to conclude the degree program. This project is on a subject selected by the student. It ties together the curriculum and allows application of the knowledge they've received through the coursework and faculty. The student is required to give an oral presentation on their project. (Offered Fall, Spring, Summer)

#### **ITM.605 Project Management (3)**

This course provides an overview of the roles, responsibilities, and management methods of the project manager from project concept to closeout and the structure of project management within an organization. Content may include project selection, quality, scope, time, cost, human resources, communications, risk, procurement and integration management. Topics selected are based on the educational requirements for the Certified Associate in Project Management curriculum (CAPM) as prescribed by the Project Management Institute and complement the information technology management curriculum. This course uses techniques such as simulation, team projects, case studies and interactive discussions to facilitate application of the concepts.

#### **ITM.630 Database Management Systems (3)**

Course Provides an overall understanding of database techniques, beginning with a study of the characteristics of relational database management systems and continuing with structured query language (SQL), entity-relationship diagrams, dependencies and normalization, and multi-user systems. Evolving approaches to database management, such as object-oriented database, will also be examined. Projects will require the student to develop a database design from the analysis stages to the final implementation by utilizing various design tools and a DBMS package such as Oracle.

#### **HMP.500 Healthcare Organization (3)**

This course provides an overview of and orientation to the US health care delivery system. Topics include the delivery, financing, regulation, and administration of health care services, and the economic, legal, political, and social factors which influence the health care system. Historical and contemporary issues are addressed.

#### **ITM.600 (3)**

This course will provide the student with a broad based understanding of the management of information technology in order to prepare the student to manage change as the technology is implemented in the organizational environment. It will also make the student aware of current technological issues and how they impact his or her ability to manage.

#### **ITM.610 Systems Analysis and Design (3)**

Systems analysis and design provides a general understanding of the systems development life cycle as well as other techniques including prototyping. Students will develop the analytical skills required to thoroughly understand a problem and formulate the optimal solution. Data modeling techniques such as data flow diagrams (DFDs) and IDEF will be used. Projects will require the student to use a product such as Oracle's Designer 2000 to assist in the analysis and design process.

#### **DSCI.502 Quantitative Methods and Statistics (3)**

Provides a survey of topics in statistics with particular emphasis on empirical data analysis and the model building process. Emphasis is on application and understanding of the statistical tools, mathematical concepts, and processes. Statistical packages such as SAS, SPSS, and Minitab are utilized along with Excel spreadsheet templates.

#### **IF.500 Informatics Foundations (3)**

A multidisciplinary based introduction to the informatics principles that support knowledge discovery and dissemination - the ways data is collected, organized, analyzed, represented, managed and communicated. Selected topics include basic information representation, processing and analysis; organization informatics; current applications and trends in informatics; legal issues in informatics; the roles and responsibilities of informatics professionals; and informatics impact on the evolution of society.

#### **IF.505 Programming and Problem Solving (3)**

A survey of the computer programming concepts used to solve problems within the study of informatics. The course will emphasize logical problem analysis, program development techniques, data organization and user interface concepts used to develop informatics applications.

## **OCCUPATIONAL SCIENCE AND OCCUPATIONAL THERAPY**

**Karen F. Barney, Ph.D., MS, OTR/L, FAOTA**  
*Department Chairperson*

**Debra A. Rybski, MS, MSHCA, OTR/L**  
*Vice-Chair*

**S. Omar Ahmad, OTD, Ph.D., OTR/L**  
**Rebecca M. Aldrich, Ph.D., MA, OTR/L**  
**Jeanne Eichler, M.S., OTR/L, MT**  
**Peggy R. Gettemeier, MPH, COTA/L**  
**Julia H. Kalb, MS, OTR/L**  
**S. Margaret Maloney, Ph.D., OTR/L**  
**Cynthia S. Matlock, MBA, OTR/L**  
**Sherry Muir, MOT, OTR/L**  
**Margaret A. Perkinson, PhD**  
**Katherine Serfas, OTD, OTR/L**

This program offers two degrees: a Bachelor of Science in Occupational Science (BSOS) and a Master of Occupational Therapy (MOT) degree.

Occupational Science is the study of the form, function and meaning of human activity, and how participation in everyday activities influence individuals' health, wellbeing, and overall quality of life. Occupational therapy is a health profession that addresses potential or actual barriers to participation in everyday activities in the service of helping people to live healthy and satisfying lives. Services are provided throughout the lifespan to individuals who are at risk, or who have disabling conditions or life circumstances that prevent full participation in the roles and activities that they value.

Students have guaranteed entry into the graduate level master's program if they successfully complete all the requirements of the undergraduate program. The combined BSOS and MOT program is five years of study.

Qualified Post Baccalaureate students with degrees in other fields may apply to the MOT program for two years of study (including one summer semester).

## Educational Requirements

**Freshman Entry:** A high school GPA of at least 3.0; three years of sciences, including one year of chemistry and one year of biology; three years of math; four years of English; an ACT composite score of at least 22 or a combined SAT score of no less than 1100.

**Transfer Entry:** Transfer students may enter the program during the freshman, sophomore, or junior year GPA and prerequisite courses vary by the level of admission.

**Post-Baccalaureate Entry:** Students who have a bachelor's degree may apply to MOT Program via the Graduate School online at <http://www.slu.edu/x834.xml>. Applicants provide an official transcript sent from the university where the degree was earned; the documents must indicate degree conferral, including the required prerequisite courses, listed as follows:

### Required Courses

Chemistry with a lab  
Biology with a lab  
Basic Anatomy  
Physiology  
Physics  
Lifespan Human Development  
Abnormal Psychology  
Research Methods  
Medical Terminology

A grade of "C" or higher in all of the above subjects with a cumulative GPA of 3.2 or higher based on these courses only. The GRE is not required, nor are letters of recommendation.

## Non-Academic Requirements

Fieldwork experiences in community and clinical practice settings are required in occupational therapy education. Regulations require all students to complete a criminal background check and a drug test at least once during the Program, either or both of these may be repeated as agency requirements demand. Positive results from the criminal background check or drug tests may result in ineligibility to graduate from the program. A felony conviction will affect a graduate's eligibility for professional certification and licensure.

**General College of Health Science Core Requirements-60** Credit Hours fulfilled the first two years. Includes 6 hours of English; 3 Fine Arts; 3 Philosophy; 3 Theology and 6 additional hours in Philosophy or Theology, and 11 hours of Interprofessional Education (IPE) courses. See full curriculum for the Occupational Science and Occupational Therapy Plan of Study:

<http://www.slu.edu/Documents/doisy/OTCurriculum2008.pdf>  
(Note: the curriculum is subject to change without prior notification.)

## Occupational Science (BSOS)

### Required Courses

OCS. 100 Seminar in OT Practice  
OCS. 101 Intro to OS & OT  
OCS. 305 Applied Medical Terminology  
OCS.312 Study of Occupation  
OCS.322 Contexts of Occupation  
OCS.332 Development of Occupation-lifespan  
OCS.352 Occupational Health & Wellness  
OCS.362 Lived Experience of Disabilities  
OCS.372 Occupation in Diverse Communities  
**Note:** Descriptions for these courses may be accessed by visiting <http://www.slu.edu/x47831.xml>

## Master of Occupational Therapy (MOT)

For the first two semesters, MOT courses are cross-listed with the OCS 4XX level BSOS courses. These courses are required for both the occupational science seniors and the first year post baccalaureate occupational therapy students.

### Required Courses

ANAT.400 Gross Anatomy  
OCS. 462 Clinical Conditions & Phenomenology  
MOT. 500 Fundamentals of OS for Post Baccalaureate  
MOT. 502 Professional Development I  
MOT. 503 Professional Development II

MOT. 515 Kinesiology  
 MOT. 517 Neuroscience for OT  
 MOT. 520 Clinical Conditions & Phenomenology  
 MOT. 525 OT Policy & Administration  
 MOT. 526 Professional Reasoning & Development  
 MOT. 530 Fundamentals of OT Practice  
 MOT. 535 Theoretical Foundations of OT  
 MOT. 540 OT in Rehabilitation I  
 MOT. 541 OT in Mental Health II  
 MOT. 545 O.P. & Assessment of Infant & Child  
 MOT. 546 OT with Older Adults  
 MOT. 549 Applied Research I  
 MOT. 550 Applied Research II  
 MOT. 555 OT in Rehab II  
 MOT. 556 OT in Mental Health II  
 MOT. 560 OT with Infants & Children  
 MOT. 565 Applied Research III  
 MOT. 566 Applied Research IV  
 MOT. 570 Level II Fieldwork (12 weeks)  
 MOT. 575 Level II Fieldwork (12 weeks)  
**Note:** All Level II Fieldwork must be complete within 18 months following completion of academic preparation.

## Pre P.A. Scholars Track for Occupational Science Students

Occupational Science Students have the option to choose the Bachelor of Science in Occupational Science (BSOS) degree with a pre-PA track. These students follow a modified BSOS four-year curriculum. After successful completion of the Pre-PA track and the BSOS degree, the student is guaranteed a position in the PA Graduate Program. For more information go to the PA website at <http://www.slu.edu/x6928.xml>

## Graduation

Upon completion of all requirements, students receive the Master's in Occupational Therapy (MOT) Degree and are eligible to sit for the national certification examination administered by the National Board for Certification in Occupational Therapy (NBCOT). In addition to passing the national exam, most states require licensure in order to practice.

## Program Accreditation

The Occupational Therapy program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA) located at 4720 Montgomery Lane, P.O. Box 31220, Bethesda, MD 20824-1220; ACOTE's telephone number is (301) 652-AOTA.

### COURSE DESCRIPTIONS

#### Graduate Courses

#### **ANAT.400 Human Gross Anatomy (6)**

This course is designed to provide students with the knowledge of clinical anatomy necessary for practice as a health professional in athletic training occupational therapy, and physical therapy. Materials to be covered include: muscle, tendon, ligament and nerve innervation of the trunk and upper extremity, structural identification and function of the spine, heart, lungs, abdominopelvic organs, circulatory and sensory systems.

#### **OCS 462 Clinical Conditions & Phenomenology (4)**

This course will address how disability from traumatic or chronic illness disrupts occupational patterns and the role of occupational therapy in returning individuals to quality of life experiences.

#### **MOT 500 Foundational Concepts in Occupational Science (3)**

Foundational concepts underlying occupational science for post-baccalaureate master students. Theoretical perspectives that address the various themes and tenets of human occupation will be covered.

#### **MOT 502 – Professional Development Seminar I (1)**

This seminar will introduce students to the necessary preparatory prerequisites for participation in Level II Fieldwork including progression policies and procedures. In addition to scheduled seminars students will meet in small groups and individually with the Fieldwork Coordinator.

#### **MOT 503 – Professional Development II (1)**

This seminar will provide students with the necessary preparatory prerequisites for participation in level I fieldwork. This course will address evaluation of student performance during their level I fieldwork and student evaluation of level I fieldwork. Students will be introduced to the beginning process of level II fieldwork.

#### **MOT 515 Kinesiology (2)**

Students learn biomechanical and occupation based approaches across a range of musculoskeletal conditions. Assessment and intervention approaches are applied to congenital and acquired conditions encountered in person of middle age through older adulthood.

#### **MOT 517 – Neuroscience in O.T. (4)**

This course will address the neuroanatomical and neurophysiological bases of sensory perception, emotion, cognition and learning, and movement that are foundational to occupational performance. Disorders that effect the nervous system resulting in impaired functional ability will also be discussed, including management and evaluation techniques utilized by occupational therapy. Prerequisites: Bio 110, Anat 100, Chem 153, PPY 254 (or their equivalent)

#### **MOT 520 Clinical Conditions & Phenomenon (4)**

This course will address how disability from traumatic or chronic illness disrupts occupational patterns and the role of occupational therapy in returning individuals to quality of life experiences.

#### **MOT 525 Professional Development & Leadership (4)**

An introduction to the principles of management and organizational leadership, professional and personal development, and entrepreneurialism in traditional and non-traditional settings.

#### **MOT.526 - Professional Reasoning and Development (3)**

This course involves a combination of weekly large group lecture-discussions and biweekly small group seminars. Small groups of students will work closely with a faculty facilitator in a problem-based learning approach to developing clinical reasoning, teamwork, and professional communication skills. Cases will allow participants to explore personal, environmental, occupational, and ethical issues through the life span, and to apply a variety of frames of reference to evaluation and intervention. Students will be encouraged to explore and evaluate their knowledge and attitudes relative to a variety of clinical, social, and policy issues. An emphasis on independent, lifelong learning and generating solutions to complex problems will be evident throughout the course. Full-group sessions will provide didactic and interactive experiences to promote professional communication, complete prerequisites for participation in level I and level II fieldwork, understand fieldwork progression policies and procedures, and understand the expectations of students for professional behaviors during fieldwork. Lab Required

**MOT.530 Fundamentals of Occupation Centered Practice (4)**

An in-depth examination of core principles and methods involved in comprehensive occupational analysis, assessment of occupational performance, and therapeutic occupation across practice areas.

**MOT.535 Person-Environment-Occupation I (4)**

From a developmental perspective, this course will address how environment, activities, tasks, and roles of a client are used as meaningful occupations in planning interventions. This course will address adult meaningful occupations.

**MOT.540 Human-Environment-Adaptation I (4)**

Assessment, treatment planning and use of clinical reasoning to develop intervention strategies for clients. Premeditative, compensatory and adaptive approaches to psychosocial and physical dysfunction will be explored through case studies and community experiences.

**MOT.541 OT in Mental Health I: Theory, Evaluation and Treatment Planning (3)**

Assessment, treatment planning and use of clinical reasoning to develop intervention strategies for clients. Premeditative, compensatory, adaptive and mental health approaches to psychosocial and physical dysfunction will be explored through case studies and community experiences. Lab included

**MOT.545 Person-Environment-Occupation II (4)**

From a developmental perspective, this course will address how environment, activities, tasks, and roles of a client are used as meaningful occupations in planning interventions. This course will address child/adolescent meaningful occupations.

**MOT.546 – OT with Older Adults (3)**

This course addresses occupational therapy services with older adults living in the community. Learning experiences include a range of applied primary, secondary, and tertiary interventions with elders and their families. Lab required.

**MOT.549 Applied Research I (1)**

This course provides opportunities for OT students to apply evidence-based research concepts in a practice setting. An integrative approach in class is utilized to 1) support students' exploration of problems and needs presented in the practice setting, 2) facilitate the discovery of research questions and approaches that relate directly to the needs of the OT academic and practice setting, and 3) promote the successful development of projects that relate directly to the practice environment. Throughout the investigative process students work with faculty mentors and practice setting staff.

**MOT.550 Applied Occupational Therapy Research (4)**

This course provides opportunities for OT students to apply evidence-based research concepts in a practice setting. An integrative approach in class is utilized to 1) support students' exploration of problems and needs presented in the practice setting, 2) facilitate the discovery of research questions and approaches that relate directly to the needs of the OT academic and practice setting, and 3) promote the successful development of projects that relate directly to the practice environment. Throughout the investigative process students work with faculty mentors and practice setting staff.

**MOT.555 OT in Rehabilitation II (3)**

Assessment, treatment planning and use of clinical reasoning to develop intervention strategies for adult client conditions. Compensatory and adaptive approaches to neurological and physical dysfunction will be explored through case studies and community experiences. Lab required.

**MOT.556 OT In Mental Health II : Intervention and Group Skills (3)**

Assessment, treatment planning and use of clinical reasoning to develop intervention strategies for adult client conditions. Compensatory and adaptive approaches to psychosocial and psychiatric dysfunction will be explored through case studies and community experiences. Lab work included in course.

**MOT.560 OT with Infants and Children (4)**

Assessment, treatment planning and use of clinical reasoning to develop intervention strategies for child/adolescent client conditions. Compensatory and adaptive approaches to psychosocial, psychiatric, and physical dysfunction will be explored through case studies and community experiences. Lab required.

**MOT.565 Applied Research III (2-4)**

Building upon the foundation established in the previous Applied Research courses, this seminar course lays additional groundwork for an entry-level occupational therapy practitioner's appreciation of the role of scientific inquiry in the field. Students complete a significant portion of their master's project, which is related to their faculty mentor's scholarship.

**MOT.566 Applied Research IV (1)**

Building upon the foundation established in the previous Applied Research courses, this seminar course lays additional groundwork for an entry-level occupational therapy practitioner's appreciation of the role of scientific inquiry in the field. Students complete a significant portion of their master's project, which is related to their faculty mentor's scholarship.

**MOT.570 Level II Fieldwork (6)**

Building on the foundation established in the MOT courses, Level II Fieldwork provides students with the opportunity to integrate academic knowledge with application of skills in a practice setting. Further, Level II Fieldwork is designed to develop competent, entry-level, generalist occupational therapists.

**MOT.575 Level II Fieldwork (6)**

Building on the foundation established in the MOT courses, Level II Fieldwork provides students with the opportunity to integrate academic knowledge with application of skills in a practice setting. Further, Level II Fieldwork is designed to develop competent, entry-level, generalist occupational therapists.

## PHYSICAL THERAPY AND ATHELETIC TRAINING

### Physical Therapy

**Mark F. Reinking, PT, PhD, SCS, ATC**  
*Department Chairperson*

**Tricia Austin, PT, PhD, ATC**

**Carol Beckel, PT, MA,**

*Director of Clinical Education*

**Ethel Frese, PT, DPT, CCS**

**Kelly Hawthorne, PT, DPT, GCS**

**Ann Marcolina Hayes, PT, DPT, OCS**

**Ginge Kettenbach, PT, PhD**

**Kim Levenhagen, PT, DPT, WCC**

**Rosemary Archambault Norris, PT, MS**

**Mark Reinking, PT, PhD, SCS, ATC**

*Program Director*

**Randy R. Richter, PT, PhD**

**Gretchen Salsich, PT, PhD**

**Darina Sargeant, PT, PhD**

**Chris Sebelski, PT, DPT, OCS**

**Joanne Wagner, PT, PhD**

**Elaine Wilder, PT, PhD**

**Barbara Yemm, PT, DPT, OCS**

The Department of Physical Therapy & Athletic Training includes two separate professional programs, the Program in Physical Therapy and the Athletic Training Education Program.

The Program in Physical Therapy Program is a freshman entry six-year curriculum leading to a Bachelor of Science in Exercise Science (BSES) degree after the fourth year and a Doctor of Physical Therapy (DPT) degree after the sixth year. *Students with a baccalaureate degree can apply to the three-*



year DPT program but transfer admission is on a space available basis and is historically very limited. The admissions process in physical therapy is competitive and post-baccalaureate students must apply through the Physical Therapy Centralized Application Service ([www.ptcas.org](http://www.ptcas.org)). Progression through the program is based on meeting academic and professional behavior requirements. PT Program Website:<http://pt.slu.edu>

## Doctor of Physical Therapy (DPT)

### Prerequisites

B.S. degree with course prerequisites including biology, chemistry, physics, human anatomy and physiology, ethics, statistics, general psychology, abnormal psychology, and exercise physiology. Refer to PT Program website for further information. See full curriculum for the Department of Physical Therapy & Athletic Training:

[http://www.slu.edu/Documents/enrollment/registrar/10-11\\_AH\\_PTAT.pdf](http://www.slu.edu/Documents/enrollment/registrar/10-11_AH_PTAT.pdf)

### Required Courses (DPT Degree)

AHP.412 Survey of Disease  
 ANA.T400 Gross Anatomy  
 ANA.T430 Neuroscience  
 DPT.402 Professional Development I  
 DPT.405 Human Growth & Development  
 DPT.411 Kinesiology I  
 DPT.412 Kinesiology II  
 DPT.415 Therapeutic Exercise  
 DPT.420 Developmental Biology  
 DPT.455 Basic Exam  
 DPT.460 Clinical Research & Design  
 DPT.470 Basic Procedures  
 DPT.480 Evidence Based Practice  
 DPT.484 Skills Practicum  
 DPT.507 Applied Neuroscience  
 DPT.508 Professional Development II  
 DPT.510 Professional Development III  
 DPT.512 Professional Development IV  
 DPT.513 Physical Agents I  
 DPT.514 Physical Agents II  
 DPT.519 Biomechanical Interventions  
 DPT.520 Musculoskeletal Conditions I  
 DPT.521 Musculoskeletal Conditions II  
 DPT.522 Musculoskeletal Conditions III  
 DPT.523 Musculoskeletal Conditions IV  
 DPT.525 Clinical Gait  
 DPT.526 Neuropathology  
 DPT.527 Neurological Conditions I  
 DPT.528 Neurological Conditions II  
 DPT.529 Cardiopulmonary Conditions  
 DPT.534 Multisystem Management  
 DPT.540 Lab Studies & Imaging  
 DPT.542 Pharmacology  
 DPT.560 Departmental Administration  
 DPT.561 Applied Administration & Management  
 DPT.564 Communication Processes in Patient Care I

DPT.565 Communication Processes in Patient Care II  
 DPT.566 Concepts of Wellness  
 DPT.570 Patient Management I  
 DPT.571 Patient Management II  
 DPT.572 Patient Management III  
 DPT.579 Seminar in Clinical Instruction  
 DPT.580 Clinical Rotation I (4 wks)  
 DPT.581 Clinical Rotation II (5 wks)  
 DPT.582 Clinical Rotation III (5 wks)  
 DPT.583 Clinical Rotation IV (18 wks)  
 DPT.590 Applied Evidence Based Practice  
 DIE.T502 Survey of Nutrition  
 IPE.490 Integrative Interprofessional Practicum

## Program Accreditation

The Physical Therapy Program at Saint Louis University was among the first thirteen physical therapy programs to be accredited in 1936 and has held continuous accreditation since then. The program currently has accredited status by the Commission on Accreditation in Physical Therapy Education, American Physical Therapy Association, 1111 North Fairfax Street, Alexandria, Virginia 22314. 703-706-3245

## Athletic Training

### Anthony Breitbach, PhD, ATC

*Program Director*

### Timothy Howell, EdD, ATC, CSCS

*Clinical Education Coordinator*

### Jason Bennett, PT, MS, SCS, ATC

### Katherine Newsham, PhD, ATC

### Tyler Wadsworth, MD

*Medical Director*

The Athletic Training (AT) Education Program is a freshman entry five-year curriculum leading to a BSES degree after the fourth year and a Master of Athletic Training (MAT) degree after the fifth year. *Students with a baccalaureate degree can apply to the two year professional program but transfer admission is on a space available basis and is limited.* Application information is available on the Athletic Training Education Program website. Progression through the program is based on meeting academic and professional behavior requirements. AT Education Program Website: <http://at.slu.edu>

## Master of Athletic Training (MAT)

### Prerequisites

B.S. degree with course prerequisites including biology, chemistry, physics, human anatomy and physiology, exercise physiology, ethics, general psychology, pre-calculus, statistics and medical terminology. Refer to AT Education Program

website for further information.

### Required Courses (MAT Degree)

ANAT.400 Gross Anatomy  
 DIET.501 Survey of Nutrition for AHP  
 MAT.501 Principles of Athletic Training  
 MAT.510 Athletic Training Kinesiology  
 MAT.524 Musculoskeletal Assessment & Mgmt I  
 MAT.525 Musculoskeletal Assessment & Mgmt II  
 MAT.530 Therapeutic Modalities in AT  
 MAT.540 Lab Studies and Imaging  
 MAT.550 Rehabilitation in Athletic Training I  
 MAT.555 Rehabilitation in Athletic Training II  
 MAT.560 Athletic Training Administration  
 MAT.562 Psychology of Sport and Injury  
 MAT.565 Research in Athletic Training  
 MAT.570 AT Clinical Practicum I  
 MAT.575 AT Clinical Practicum II  
 MAT.580 Medical Conditions in Athletic Training  
 MAT.590 AT Field Experience  
 MAT.595 AT Clinical Practicum III  
 MAT.616 Enhancing Athletic Performance  
 MAT.670 AT Capstone Project  
 MAT.671 AT Clinical Practicum IV  
 MAT.680 Seminar in Athletic Training

## Program Accreditation

On April 8, 2010, the Commission on Accreditation of Athletic Training Education (CAATE) awarded Saint Louis University accreditation as an Entry-Level Master's Program. The five year accreditation is the maximum for newly accredited programs. The SLU program is one of more than 350 CAATE accredited programs nationally and one of approximately 25 accredited Entry-Level Master's programs in the country. More information is available from the CAATE at 512-733-9700, <http://www.caate.net> or 2201 Double Creek Drive, Suite 5006, Round Rock, TX 78664.

### COURSE DESCRIPTIONS

#### DPT Curriculum

##### AHP.412 – Survey of Disease (2)

This course will present an overview of human diseases. The pathogenesis of disease as well as health promotion and disease prevention is included. All major systems will be covered. The course is offered in merged lecture/ on-line learning format.

##### ANAT.400 Gross Anatomy (6)

This course is designed to provide students with the knowledge of clinical anatomy necessary for practice as a health professional in athletic training occupational therapy, and physical therapy. Materials to be covered include: muscle, tendon, ligament and nerve innervation of the trunk and upper extremity, structural identification and function of the spine, heart, lungs, abdominopelvic organs, circulatory and sensory systems.

##### ANAT.430 Neuroscience (5)

This course is designed to provide students with the knowledge of neuroscience necessary for practice as a health professional in athletic training occupational therapy, and physical therapy.

##### DPT.402 - Professional Development I (2)

The focus of this course is the development of professional behaviors expected to be possessed by graduate physical therapists. The student will

participate in self-assessment and reflection in order to explore his/her beliefs about those professional behaviors and core values of the profession

##### DPT.405 Human Growth and Development (3)

This course provides students with a comprehensive approach to pediatric patients with congenial, developmental, and/or neurological conditions. Emphasis is placed on examination skills and intervention strategies. Patient demonstrations are included. Labs where students practice their skills with peers as well as with children with developmental challenges are integral course components. This course includes a lab component.

##### DPT.411 - Kinesiology I (2)

This course extends the core principles of classical mechanics to human movement applications and covers the kinesiology of the shoulder and elbow. Upon completion of this course, the student will be prepared to describe and discuss human movement in biomechanical terms. In addition, students will be able to explain the contributions and interactions of the muscular, skeletal, and nervous systems in purposeful human motion. This course includes a lab component.

##### DPT.412 Kinesiology II (3)

Kinesiology II is intended to provide the student with the foundational knowledge necessary to analyze human motion and design appropriate intervention. Upon completion of this course, the student will be prepared to explain the contributions and interactions of the muscular, skeletal, and nervous systems in purposeful human motion and will use the concept of normal motion as a reference point to understand the effect of pathology on motion. This course includes a lab component.

##### DPT.415 Therapeutic Exercise (2)

This course emphasizes laboratory experiences where various types of therapeutic exercises are analyzed and the psychomotor skills for performing these exercises are developed. Case discussions where the student has the opportunity to select appropriate therapeutic exercise intervention based on patient examination will be included. This course includes a lab component.

##### DPT.420 Developmental Biology (3)

The focus of this course is basic science knowledge needed in physical therapy. Topics covered include histology, embryology, and genetic influences.

##### DPT.455 Basic Examination (3)

This course is designed to provide a basic knowledge of common physical therapy tests and measures. Essential concepts of measurement issues will be presented from a theoretical and practical viewpoint. Therapist-patient communication, therapist-patient safety, and respect for the cultural differences, values, and dignity of patients will be emphasized. This course includes a lab component.

##### DPT.460 Clinical Research and Design (2)

This course examines how research is used to practice in an evidence based manner. Practitioners of evidence-based clinical practice are able to put what he or she needs to know into an answerable question, efficiently search the literature, critically appraise the findings, integrate the evidence with clinical judgment and the patient's values, and bring the process full circle by evaluating the effort. Implementing this process should be as familiar to practitioner as is performance of basic measurement skills like measurement of blood pressure.

##### DPT.470 Basic Procedures (2)

The primary purpose of this course is to offer the senior physical therapy student an introduction to specific observation, examination and evaluation skills as well as designated treatment interventions in both a theoretical and practical application framework. It is expected that this material will act as part of the foundation on which the student will build throughout his/her professional career. Treatment interventions include therapeutic patient positioning, patient transfer and transport, gait with assistive devices and infection control. Basic nursing procedures, ie., IV's, catheters, O2 administration, and their significance to physical therapy treatment are presented. Also included will be practical application of monitoring of previously acquired knowledge of vital signs as a critical measure of patient response to treatment. Throughout this course there will be an emphasis on therapist-patient verbal and nonverbal communication skills as well as therapist-patient safety. This course includes a lab component.

**DPT.480 Evidence-Based Clinical Practice (2)**

This course examines how research is used to practice in an evidence based manner. Practitioners of evidence-based clinical practice are able to put what he or she needs to know into an answerable question, efficiently search the literature, critically appraise the findings, integrate the evidence with clinical judgment and the patient's values, and bring the process full circle by evaluating the effort. Implementing this process should be as familiar to practitioner as is performance of the basic measurement skills like measurement of blood pressure.

**DPT.484 Skills Practicum (1)**

Skills practicum is the PT student's first opportunity to practice basic PT skills in a clinical setting under the supervision of a clinical instructor. It is comprised of two components. The didactic or classroom component consists of class session in preparation for and discussion of the clinical component of the course. The clinical component of the course involves student participation in clinical experiences one-half day per week for 12 weeks in a variety of facilities with close supervision. The student practices communication, examination and intervention skills.

**DPT.507 Applied Neuroscience (2)**

Motor control theory and applications, and motor learning principles are presented as they relate to healthy individuals and patient interventions. Principles of neuroanatomy and neurophysiology are reviewed and applied to patient case studies. This course includes a lab component.

**DPT.508 Professional Development II (1)**

The focus of this course is the professional issues facing physical therapy presented in the context of the goals of the American Physical Therapy Association. The organization's structure, governance, priorities, and professional legal and ethical aspects are explored.

**DPT.510 Professional Development III (1)**

The focus of this course is the development of expected professional behaviors. The student will participate in self-assessment and reflection in order to explore his/her beliefs about those professional behaviors and core values of the profession. Since the content is developmental in nature, the course will extend over three semesters.

**DPT.512 Professional Development IV (1)**

The focus of this on-line course is the development of expected professional behaviors. The student will participate in on-line discussions by using self-assessment and reflection. The student will identify his/her needs in his/her first job, including characteristics of a mentor. Among other current issues in the profession, the students will also discuss substance abuse by physical therapists and the implications to the profession.

**DPT.513 Physical Agents I (2)**

Thermal Agents is the first in a sequence of courses concerned with the physical, physiological, and psychological rationale for treatment utilizing physical agents. Upon completion of this course, it is expected that the student will have acquired not only a theoretical and practical knowledge of a variety of physical agents, but that she/he also will be able to integrate this component of treatment into overall patient care treatment plan that provides for optimum goal achievement. In addition to subject matter synthesis and performance demonstration, this course emphasizes the following: therapist-patient verbal, non-verbal, and written communication; optimum patient positioning and draping; therapist and patient safety during application of physical agents; and thorough knowledge of proper equipment usage and maintenance. Laboratory sessions will be conducted in a simulated patient problem-solving format. This course includes a lab component.

**DPT.514 Physical Agents II (2)**

Electrical and Mechanical Agents is concerned with the physical, biological, physiological and psychological rationale for treatment utilizing electrical and mechanical agents. Upon completion of this course, the student will have had the opportunity to acquire theoretical and practical knowledge of electrical and mechanical agents and also will have had the opportunity to begin planning an overall patient treatment care program for optimum goal achievement. This course includes a lab component.

**DPT.519 Biomechanical Interventions (3)**

Biomechanical Interventions is focused on physical therapy management for patients with impairments, functional limitations, or disability as a result of neuromusculoskeletal pathologies that require orthotic/prosthetic and/or soft

tissue management. Students will study theoretical frameworks, practice examination techniques (history, systems review, and tests and measures), evaluate examination data, and design appropriate intervention through paper and patient cases. During the course, the student will be expected to recall and use the patient management principles, measurement concepts, and clinical reasoning framework that were introduced in previous classes in order to practice clinical decision making.

**DPT.520 Musculoskeletal Conditions I (2)**

This course is a broad survey of medical management for patients with disorders which affect the musculoskeletal system. The student will be introduced to the pathology, etiology, and epidemiology/demographics of selected disorders. Medical differential diagnosis will be discussed, including clinical signs and symptoms, and the interpretation of laboratory and radiological data for ruling out or ruling in particular disorders. The student will use this information in a broader sense to formulate rudimentary knowledge and skills in medical screening and systems differential diagnosis to help prepare for their professional role as a first provider of care. Additionally, the medical management of selected disorders will be considered, including surgical, pharmacological, radiological, psychological intervention, and preventative care as applicable. The indications for physical therapy intervention from a medical perspective as well as the impact of specific types of medical care on physical therapy procedures will be discussed. The student will be introduced to the particulars of physical therapy management of patients with osteoporosis, arthritis, and connective tissue disorders.

**DPT.521 Musculoskeletal Conditions II (3)**

Musculoskeletal Conditions II is focused on physical therapy management for patients with impairments, functional limitations, or disability as a result of neuromusculoskeletal pathology of the spine, pelvic girdle, or connective tissue system. Each regional unit includes examination (history, systems review, and tests and measures), evaluation of examination data, and designing appropriate intervention. Lectures will focus on the pathoanatomy and pathokinesiology of common conditions and will present the evidence to support examination and intervention decisions. Lab sessions will focus on learning the psychomotor aspects of examination and intervention as well as the opportunity to apply new information and skills to case situations using clinical reasoning strategies. This course includes a lab component.

**DPT.522 Musculoskeletal Conditions III (4)**

Musculoskeletal Conditions III is focused on physical therapy management for patients with impairments, functional limitations, or disability as a result of neuromusculoskeletal pathology of the TMJ or upper/lower extremity (excepting the hand). Each regional unit includes examination (history, systems review, and tests and measures), evaluation of examination data, and designing appropriate intervention. Lectures will focus on the pathoanatomy and pathokinesiology of common conditions and will present the evidence to support examination and intervention decisions. Lab sessions will focus on learning the psychomotor aspects of examination and intervention as well as the opportunity to apply new information and skills to care situations using clinical reasoning strategies. This course includes a lab component.

**DPT.523 Musculoskeletal Conditions IV (3)**

Musculoskeletal Conditions IV is the terminal course in the musculoskeletal conditions series. It begins with the physical therapy management of patients with impairments, functional limitations, or disability as a result of neuromusculoskeletal pathology of the wrist and hand. The course then shifts to industrial physical therapy including ergonomics and work hardening/conditioning. The challenge of treating patients with chronic pain syndromes is addressed with a focus on multidisciplinary care. Special consideration is given to physical therapy management of patients with hematologic disorders and post-polio syndrome. This course includes a lab component.

**DPT.525 Clinical Gait (2)**

Clinical Gait is intended to provide the entry-level Doctor of Physical Therapy student with the foundational knowledge and practical skills necessary to analyze human gait, identify causes of pathologic gait, and begin to design appropriate intervention. Upon completion of this course, the student will be prepared to fully describe the characteristic gait pattern of a healthy adult and to identify abnormal (pathologic) gait patterns. In addition, students will be able to discuss potential causes of pathologic gait and begin to formulate treatment ideas to address these factors. Finally students will develop

observational skills to accurately perform normal and pathologic gait assessment. This course includes a lab component.

#### **DPT.526 Neuropathology (2)**

This course provides the student with current information on the medical diagnosis and management of disorders pertinent to the nervous system. This course is intended to be a companion to the physical therapy course on rehabilitation of neurological conditions.

#### **DPT.527 Neurological Conditions I (4)**

This course provides students with a comprehensive approach to neurological conditions in primarily adult patients. Emphasis is placed on examination skills and intervention strategies. Patient demonstrations are included. Labs where students practice their skills with peers as well as with adults with neurological conditions are integral course components. This course includes a lab component.

#### **DPT.528 Neurological Conditions II (2)**

This course provides students with a comprehensive approach to pediatric patients with congenital, developmental, and/or neurological conditions. Emphasis is placed on examination skills and intervention strategies. Patient demonstrations are included. Labs where students practice their skills with peers as well as with children with developmental challenges are integral course components. This course includes a lab component.

#### **DPT.529 Cardiopulmonary Conditions (3)**

This course examines the pathogenesis and pathophysiology of cardiovascular and pulmonary disorders. Cardiopulmonary examination, goal setting and intervention methodologies are included. This course includes a lab component.

#### **DPT.534 Multi System Management (3)**

This course is intended to present the student with a comprehensive approach to patients with medical and/or surgical conditions. Emphasis is placed on examination, evaluation and intervention strategies and the information that impacts the selection and implementation of these procedures. Students will develop skills in examination, evaluation, intervention, and pre-assessment, and will be able to provide principles and rationale for decisions. The course consists of various conditions, the therapeutic interventions, and the effect of these on the patient/client. The conditions include oncologic conditions, burn injuries, wounds, lymphedema, HIV, childbearing year musculoskeletal dysfunction, and incontinence. This course includes a lab component.

#### **DPT.540 Lab Studies & Imaging (2)**

This course covers clinical testing, including clinical lab studies, EMG/NVC, radiological studies, MRI, vascular and general ultrasound.

#### **DPT.542 Pharmacology (1)**

This one hour lecture course will provide a basic overview of drugs commonly used by patients seen in physical therapy. The process of pharmacokinetics, pharmacodynamics and autonomic pharmacology will be reviewed with an emphasis on age differences. General drug categories, specific actions, and adverse reactions will be discussed. Dosage determinations, based on age and weight, will be introduced.

#### **DPT.560 Department Administration (2)**

This course covers the basic administrative, management, and leadership aspects of developing and operating a physical therapy service. Included are discussions of: the impact of the health care environment on physical therapy practice, values and motivations associated with the operation of a physical therapy practice, marketing, the organizational operation theories, structure, and processes. Students as a small group will develop a hypothetical new program using elements of a business plan.

#### **DPT.561 Applied Administration & Mgmt (2)**

During this course the students will apply the concepts of management and administration to organization operations and interpersonal relationships. Students will be asked to refer to clinical environments familiar to them to serve as point of reference. Current literature will be reviewed. During the course the students will discuss recent trends in the health care delivery system and the implications for physical therapy services. The students will address legal issues that are relevant in management of physical therapy practice.

#### **DPT.564 Communication Processes in Patient Care I (1)**

This course covers teaching skills, interviewing skills and other communication skills needed in the clinical environment. This course also provides opportunity to apply learning theory, personality theory and developmental theory to communicating within the clinical environment.

#### **DPT.565 Communication Processes in Patient Care II (2)**

This course covers teaching skills, interviewing skills and other communication skills needed in the clinical environment. This course also provides opportunity to apply learning theory, personality theory and developmental theory to communication within the clinical environment.

#### **DPT.566 Concepts of Wellness (1)**

This course introduces the students to several models of health beliefs as related to wellness. It covers adherence and models to improve adherence. The influence of spirituality on health and on healthcare is addressed.

#### **DPT.570 Patient Management I (2)**

This course provides the opportunity to integrate the various dimensions of patient care into an organized problem-solving process in order to prepare the student for more advanced clinical rotations starting with Clinical Rotation II. This course will integrate content information from all previous and concurrent courses in the physical therapy curriculum. The clinical problem solving process will cover all aspects of patient management, from the gathering of subjective and objective data during the examination, through evaluation, diagnosis and prognosis phase, and into intervention planning and delivery. The primary focus of this course will be clinical decision-making for patients with orthopedic impairments through the life-span. Additionally, the identification and impact of critical issues related to medical status and patient safety through all aspects of patient care will be emphasized. Clinical reasoning for desired functional out-comes is reinforced as the student learns to form and communicate rationale which describes the relationship between identified impairments and desired functional outcomes. The student will have the opportunity to participate in interprofessional team case seminar.

#### **DPT.571 Patient Management II (2)**

Because physical therapists are allowed to be the point of entry into health care in the vast majority of states, physical therapists have an expanding responsibility to perform medical screening examinations and evaluate whether a patient needs referral to other health care professionals. The emphasis of this course builds upon the student's knowledge about medical screening and the physical therapy differential diagnosis procedures taught in Patient Management I. The student will learn to perform advanced medical screening and P.T differential diagnosis from a regional perspective in order to promote the student's ability to create organizational schemes for examination which are clinically useful. Systems and organs that will be expanded upon for medical screening will include: cardiovascular, pulmonary, reproductive, breast, upper/lower urinary tract, esophagus, stomach, liver, gall bladder, bile duct, intestines, colon, appendix, pancreas, and to a lesser extent: endocrine, metabolic, hematologic, CNS, musculoskeletal and psychiatric disorders. Students will consider the epidemiology of these systems for key disorders (specifically, incidence and prevalence as it relates to the epidemiology of common medical disorders which can mimic musculoskeletal disorders.) Students will also learn referred symptom patterns of specific muscles, particularly those which produce symptoms in the head, neck, trunk, and proximal limbs, as they often mimic pain patterns produced by organs. Based on case findings, students will make appropriate recommendations whether P.T. intervention and/or referral to other medical professionals is appropriate and how such referrals should be made. The course also will consider the precedence in the legal literature and state licensure sanctions which address the boundaries of practice, especially in regards to the role of physical therapists vs. the role of the physician. This course includes a lab component

#### **DPT.572 Patient Management III (2)**

This course builds on the clinical problem-solving processes introduced in Patient Management I & II in order to further prepare the student for more advanced clinical rotations. While all skills learned in Patient Management I & II will continue to be reinforced and incorporated in this class using patient cases with a multi-system approach, Patient Management III adds the management of neurologic impairments to the clinical problem-solving process. The fabrication of intervention programs based on examination results and the modification of established intervention programs will be emphasized, including appropriate referrals to other health care providers. Additionally, patient management issues for the home health patient are discussed. The student will enhance his or her ability to critique and advance

common exercise protocols given particular cases. The student also will have the opportunity to participate in an interdisciplinary team case seminar, and to improve visual kinematic evaluation skills through videotaped patient cases.

#### **DPT.579 Seminar Clinical Instruction (1)**

This course covers clinical the interpersonal and technical components of clinical education. Establishing a positive environment for learning, principles of student supervision, student assessment, and alternative models of clinical education are covered. Application of educational set, body, closure, and planning are covered. The Meyers-Briggs Type Indicator is used as a model for personality, teaching, and learning styles. Educational objectives for clinical education, questioning, adult learning, and a model for working through Challenging Student situations are discussed.

#### **DPT.580 Clinical Rotation I (2)**

Clinical Rotation I is comprised of two components. The didactic or classroom component consists of class sessions in preparation for and discussion of the clinical component of the course. The clinical component involves the student spending 4 weeks in an acute/subacute clinical setting with a clinical instructor. The students practice skills previously learned and use clinical reasoning skills with maximal supervision of the clinical instructor.

#### **DPT.581 Clinical Rotation II (2)**

Clinical Rotation II is comprised of two components. The didactic or classroom component consists of class sessions in preparation for and discussion of the clinical component of the course. The clinical component involves the student spending 5 weeks in an outpatient orthopedic clinical setting with a clinical instructor. The student will perform all phases of assessment and intervention including goals, discharge planning, treatment progression and interaction with appropriate healthcare professionals.

#### **DPT. 582 Clinical Rotation III (2)**

Clinical Rotation III is comprised of two components. The didactic or classroom component consists of class sessions in preparation for and discussion of the clinical component of the course. The clinical component involves the student spending 5 weeks in an adult inpatient or outpatient clinical setting with a clinical instructor. The student will perform all phases of assessment and intervention including goals, discharge planning, treatment progression and interaction with appropriate healthcare professionals.

#### **DPT.583 Clinical Rotation IV (7)**

Clinical Rotation IV is comprised of two components. The didactic or classroom component consists of class sessions in preparation for and discussion of the clinical component of the course. The clinical component involves the student spending 18 weeks in two separate clinical settings (each 9 weeks in length) with a clinical instructor. The student will perform all phases of assessment and intervention including goals, discharge planning, treatment progression and interaction with appropriate healthcare professionals for an entry-level caseload.

#### **DPT.590 Applied Evidence-Based Clinical Practice (2)**

In this course clinical interns use principles of evidence-based clinical practice to answer clinical questions which arise during their internship experience.

#### **DIET. 502 Aspects of Nutrition in PT (2)**

This course covers basic fundamentals of human nutrition science. The course examines dietary guidelines for Americans, nutrition across the lifecycle, nutrition digestion, absorption, and metabolism, medical nutrition therapy for specific disease states, nutrition and exercise, and nutrition supplement use.

#### **IPE.490 Integrative Interprofessional Practicum (2)**

This course is designed to provide students with a learning experience focused upon client system centered care as members of an interprofessional team. The purpose of the team will be to provide education, consultation, and/or direct care for medically underserved individuals/families using an interprofessional plan of care. The interprofessional team will identify a pertinent health-related issue with their chosen population. They will cooperate, collaborate, communicate, and integrate in order to provide a holistic approach to care. Each professional will use his or her knowledge and expertise to maximize the productivity of the interprofessional team to improve health outcomes. Seminars will provide opportunities for students to discuss and reflect on how service activities express the professional obligation to work as change agents for a more just society.

## **MAT Curriculum**

#### **ANAT. 400 Gross Anatomy (6)**

This course is designed to provide students with the knowledge of clinical anatomy necessary for practice as a health professional in athletic training occupational therapy, and physical therapy. Materials to be covered include: muscle, tendon, ligament and nerve innervation of the trunk and upper extremity, structural identification and function of the spine, heart, lungs, abdominopelvic organs, circulatory and sensory systems.

#### **DIET.501 Survey of Nutrition for AHP (3)**

This course offers a condensed presentation of the foundations of human nutrition, incorporating some of the biochemical and physiological aspects. The role of nutrition in normal growth, development and maintenance of body functions will be investigated. Additionally, the use of nutrition in the management of disease, disease prevention, and physical performance will be addressed with guidelines for referral. Popular dietary supplements, including sport supplements will be reviewed for cost, effectiveness, and side effects. Projects will reinforce application of nutrition concepts.

#### **MAT.501 Principles of Athletic Training (3)**

This course establishes the role of the certified athletic trainer in the prevention, recognition and treatment of commonly encountered athletic injuries. Basic concepts of injury prevention, mechanisms of injury, injury evaluation, and acute injury management are covered. Laboratory sessions to demonstrate and practice taping and wrapping are included.

#### **MAT.510 Athletic Training Kinesiology (3)**

This course applies the foundational sciences of physics, human anatomy and human physiology in developing an understanding of the kinetics and kinematics of human movement in sport. Emphasis is placed on the functional motions of running, jumping, and throwing (overhand and underhand).

#### **MAT.524 Musculoskeletal Assessment and Management I (4)**

This course explores the pathokinematics of selected pathologies within the head, neck and upper quadrants of the human body, relevant examination techniques to assist in differential diagnosis, and subsequent intervention measures. Treatment procedures discussed and practiced include use of mobilization of bony and soft tissues, and other forms of active and passive exercise, both mechanical and non-mechanical, for a broad range of musculoskeletal conditions.

#### **MAT.525 Musculoskeletal Assessment and Management II (4)**

This course covers the pathokinematics of selected pathologies within the low back and lower quadrant; with the examination, diagnosis, and treatment of those conditions. Treatment procedures discussed and practiced include use of mobilization of bony and soft tissues, and other forms of active and passive exercise, both mechanical and non-mechanical, for a broad range of musculoskeletal conditions.

#### **MAT.530 Therapeutic Modalities in Athletic Training (4)**

This course covers the physical, physiological, and therapeutic aspects of the thermal physical agents used as adjunctive interventions in rehabilitation. This course also is concerned with the physical, biological, physiological and psychological rationale for treatment utilizing electrical and mechanical agents. The course covers the theoretical and practical knowledge of specific modalities and the integration of these treatment procedures into an overall rehabilitation plan.

#### **MAT.540 Lab Studies and Imaging (2)**

This course covers clinical testing, including lab studies, EMG/NCV, radiological studies, nuclear studies, magnetic resonance imaging, and ultrasound imaging. Interpretation and application of diagnostic findings will be discussed.

#### **MAT.550 Rehabilitation in Athletic Training I (4)**

This course provides a framework for the design and implementation of athletic rehabilitation programs. The emphasis in the course is the use of therapeutic exercise in the treatment of athletic injuries and post-surgical conditions. Rehabilitation programs are considered from early stage through terminal conditioning and functional return. Advanced high-level activities are reviewed including plyometrics and advanced proprioceptive activities.

Course objectives include the development of psychomotor competency in manual techniques including massage, myofascial release, joint mobilization, and proprioceptive neuromuscular facilitation. Emphasis is placed on the use of clinical reasoning in the decision making process regarding the use of manual techniques.

**MAT.555 Rehabilitation in Athletic Training II (3)**

This course provides an evidence-based approach to rehabilitation of injuries and conditions associated with athletic participation. The emphasis in the course is the development of rehabilitation protocols utilizing of therapeutic modalities and therapeutic exercise. Surgical and non-surgical approaches to conditions and injuries will be addressed

**MAT.560 Athletic Training Administration (3)**

This course is concerned with the organization and administration of athletic training services in high school, collegiate, and professional athletics, as well as non-traditional athletic training sites including industry and health clubs. Topics of emphasis include medicolegal liability, budgeting, facility design, documentation and record keeping, drug testing, professional ethics, pharmacology issues and components of pre-participation physicals. NCAA compliance issues will also be discussed.

**MAT.562 Psychology of Sport and Injury (3)**

This course examines the effects of culture, motivation, personality, attitudes, competition and group dynamics on sport performance. In addition, the psychological effects of exercise and competition are discussed, including pathological conditions such as exercise addiction and disordered eating. This course also deals with the psychological response to injury, treatment, rehabilitation and return to participation.

**MAT. 565 Research in Athletic Training (2)**

This course will introduce athletic training students to several types of clinical research designs including designs for group studies, epidemiological studies, survey research and qualitative studies. Review of literature, definition of problem and formatting design, reporting data and conclusions are presented. Interpretation of selected statistical methods will also be included.

**MAT.570 AT Clinical Practicum I (3)**

This course is designed to provide the student with the first clinical experience in athletic training. Building on the basic knowledge acquired in MA501, the student will work in the athletic training facility under the supervision of an approved clinical instructor (ACI). The focus in this experience will be familiarization with the athletic training facility environment, developing competency in taping/wrapping, documentation and record-keeping, and practice/game preparation.

**MAT.575 AT Clinical Practicum II (3)**

This is the second clinical course for the athletic training student. In this course, the student is assigned to a clinical site for the semester and assists the ACI with pre-participation exams, daily preparation and coverage of practices and games (home and away) and injury management and rehabilitation. The student focuses on developing competency in the examination and treatment of upper and lower extremity injuries during this semester.

**MAT.580 Medical Conditions in Athletic Training (3)**

This course is a review of responses of the body to exercise and sports with specific discussion of acute and chronic medical problems that can affect athletic performance. In addition, this course covers drugs commonly used in sports medicine. The processes of pharmacokinetics and pharmacodynamics and autonomic pharmacology will be reviewed. General drug categories, specific actions, and adverse reactions will be discussed.

**MAT.590 AT Field Experience (2)**

This is an internship with the athletic training staff of an outside agency affiliated with the program. Documentation will be kept in a web-based portfolio format.

**MAT.595 AT Clinical Practicum III (4)**

This is the third clinical course for the athletic training student. Expanding on their prior experience, students will be assigned for the semester as a senior athletic training student for a clinical site, and will also have additional athletic training facility coverage hours. Through the mentoring of the ACI and these expanded responsibilities, the student is expected to show development of the communication, time management and organizational skills necessary to succeed in a high volume athletic training setting. With an

emphasis on problem solving and critical thinking skill development, the student will be expected to take a more active role when providing athletic health care to the injured athletes.

**MAT.616 Enhancing Athletic Performance (2)**

This course is designed for students to use knowledge of anatomy, physiology, kinesiology, and coaching techniques in designing strength and conditioning programs for athletes. Consideration will be given to strategies for improving sport-specific agility, speed, power, strength, and cardiovascular/respiratory fitness.

**MAT.670 Athletic Training Capstone Project (2)**

In this capstone course in the final semester, the student will select and study a topic in athletic training. Each student selects a faculty advisor to provide guidance in planning, coordinating, conducting and presenting the project. The study can take several different forms including a literature review, a mentored research project with a faculty member, a community service project in athletic training

**MAT.671 AT Clinical Practicum IV (4)**

In this final clinical experience, students will be assigned to an athletic training clinical site for the semester under supervision and instruction from an ACI. The fieldwork will emphasize greater involvement in the day-to-day organizational and administrative tasks and professional development and responsibilities.

**MAT.680 Seminar in Athletic Training (3)**

In this course, students will fine-tune their clinical skills in preparation for the Board of Certification examination. Advanced topics in Athletic Training will be presented by a variety of health care providers.

## PHYSICIAN ASSISTANT EDUCATION

**Anne C. Hart Garanzini, M.Ed., PA-C**  
*Interim Director/Department Chairperson*

**Michael J. Cox, M.D., FACP, FCCP**  
*Medical Director*

**Carol R. Danter, MPAS, PA-C**  
**Genevieve A. DelRosario, MHS, PA-C**  
**Christine M. Werner, Ph.D., R.D., PA-C**  
**Mary White, ascj, MS, PA-C**

The Department of Physician Assistant (PA) Education offers a 27-month, year round, competency based program with a rigorous didactic and clinical curriculum leading to a Master of Medical Science (MMS) degree. During the didactic phase (4 semesters), the student studies the basic medical sciences of anatomy and physiology, as well as applied behavioral sciences and the foundations of clinical medicine. Educational material is presented through organ system based courses/modules which support the integration of complex disease processes with diagnosis and treatment. The clinical phase (3 semesters) consists of rotations in Internal Medicine, General Surgery, Pediatrics, Emergency Medicine, Women's Health, Family Medicine, Psychiatry/Behavioral Medicine (tentative) and two rotations in clinical specialties of the student's choice (Clinical Elective and EBM Clerkship). While working clinically with the supervision of a physician or mid-level

preceptor, the student actively participates in the care of patients of all ages and backgrounds. Graduates of the SLU PA Program are eligible to sit for the Physician Assistant National Certifying Exam (PANCE). Certified Physician Assistants diagnose and treat patients and are employed in Primary Care and in essentially every medical and surgical specialty and subspecialty in which physicians are employed, including hospitals, health clinics, physician offices and other healthcare settings. An optional post-graduate mini-residency in an area of the student's choice allows graduates to increase their clinical expertise in a specific medical or surgical discipline.

## Master of Medical Science (MMS)

### Prerequisite

Baccalaureate degree prior to matriculation. Minimum Science GPA of 3.0 and minimum Overall GPA of 3.0. Minimum 500 hours of direct patient care experience at time of application. Strong preference will be given to applicants with credentialed work experience providing direct patient care. Successful completion of the following prerequisite courses or equivalents: Medical Terminology; Statistics; College Chemistry I & II; Organic Chemistry I & II; Microbiology; Vertebrate or Human Anatomy; Vertebrate or Human Physiology; Molecular Biology, Genetics or Upper-Level Biochemistry.

### Required Courses

ANAT.400: Human Gross Anatomy  
 PAED.500: Psychosocial Dynamics in Health Care  
 PAED.501: Professional Issues of PA Practice  
 PAED.504: Physiology  
 PAED.507: Principles of the Medical Interview  
 PAED.511: Intro to the Systems Approach & Integument  
 PAED.512: Principles & Practice of Hematology  
 PAED.513: Prin. & Practice of Otorhinolaryngology & Ophthalmology  
 PAED.515: Pharmacology I  
 PAED.520: Pharmacology II  
 PAED.521: Prin. & Practice of Pulmonology  
 PAED.522: Prin. & Practice of Cardiovascular Medicine  
 PAED.523: Prin. & Practice of Gastroenterology & Nutrition  
 PAED.524: Prin. & Practice of Nephrology & Genitourinary Medicine  
 PAED.525: Prin. & Practice of Endocrinology  
 PAED.530: Evidence Based Medicine  
 PAED.531: Prin. & Practice of Orthopedics & Rheumatology  
 PAED.532: Prin. & Practice of Neurology  
 PAED.533: Essentials of Surgery  
 PAED.534: Essentials of Emergency Medicine  
 PAED.536: Essentials of Pediatrics  
 PAED.537: Essentials of Behavioral Medicine  
 PAED.538: Essentials of Obstetrics & Gynecology  
 PAED.540: Internal Medicine

PAED.542: Family Medicine  
 PAED.551: General Surgery  
 PAED.560: Pediatrics  
 PAED.575: Women's Health  
 PAED.580: Emergency Medicine  
 PAED.586: EBM Clerkship  
 PAED.593: Clinical Elective  
 PAED.600: Senior Seminar  
 PAED.TBA: (optional) Post-Graduate Mini-Residency (8-15 weeks)

### Additional Requirements

In addition to meeting all the prerequisite requirements outlined above, graduates of an international college/university are also required to successfully complete at least 9 hours of social-behavioral science courses (e.g., psychology, sociology) and 12 hours of upper division science courses at an accredited, four-year U.S. college or university (online coursework is not acceptable). International medical graduates must have a minimum 500 hours of healthcare experience outside of the U.S. and must also acquire at least 250 hours of patient care experience in the U.S. by the time of application. Applicants whose native language is other than English are required to take the TOEFL® Internet-based Test by December 1. A combined minimum score of **100** is required, with minimum component scores of 22-Reading, 22-Listening, 26-Speaking and 24-Writing.

## Program Accreditation

The SLU PA Program has maintained full accreditation since its inception, is currently accredited by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) and is scheduled for its next accreditation review in 2013. For information on PA program accreditation, contact the ARC-PA at 12000 Findley Road, Suite 240, Duluth, GA, 30097. 770.476.1224. Web: [www.arc-pa.org](http://www.arc-pa.org)

### COURSE DESCRIPTIONS

#### Graduate Courses

##### ANAT.400 Human Gross Anatomy (8)

This course is designed to provide students with the knowledge of clinical anatomy necessary for practice as a health professional in athletic training occupational therapy, and physical therapy. Materials to be covered include: muscle, tendon, ligament and nerve innervation of the trunk and upper extremity, structural identification and function of the spine, heart, lungs, abdominopelvic organs, circulatory and sensory systems.

##### PAED.500 Psychosocial Dynamics in Health Care (2)

This course introduces the student to the psychological, social and family context of health, illness and health care. A major premise of this course is that to adequately meet the needs of the patient, the PA must consider not only disease factors, but also psychosocial factors, which affect the disease and are affected by it as well. Topics include personality, development from infancy through old age, the family's role in health care, sex and sexuality, death and dying.

##### PAED.501 Professional Issues of PA Practice (2)

This course explores through lecture and discussion the factors affecting the history and development of the profession, ethical and legal issues governing clinical responsibilities, the healthcare delivery system and professional practice as one of the integral members of the health care team.

**PAED.504 Physiology (4)**

This is a comprehensive course that covers all major systems of the human body. Special emphasis is placed on the clinical application of this knowledge. The course is designed specifically for PA students as they prepare for courses in pathophysiology and clinical medicine. Previous physiology or combined anatomy/physiology is a prerequisite.

**PAED.507 Principles of the Medical Interview (2)**

This course focuses on the medical interview as a clinical skill. The various components of the medical history are presented along with techniques for effective medical interviewing. Students apply these skills while obtaining histories from selected patients. Guidance is provided with respect to communicating with patients of all cultural backgrounds, ages and personalities. A self-guided medical terminology course is also included.

**PAED.511 Intro to the Systems Approach & Integument (2)**

Initial components of this course will introduce the student to the general concepts of the physical exam. The Dermatology course provides an integrated approach to understanding the pathophysiologic basis of dermatologic disorders as well as the pharmacological rationale for their therapy. Material is introduced in a stepwise fashion beginning with normal organ-specific anatomy, progressing to the pathophysiology, clinical features and treatment of representative disorders.

**PAED.512 Principles & Practice of Hematology (2)**

This course examines the physical manifestation, evaluation of laboratory and clinical data, differential diagnosis and treatment of major disorders of the hematologic system. Included in this course are common laboratory tests used in the evaluation of other anatomic systems including the significance of abnormal findings.

**PAED.513 Prin. & Practice of Otorhinolaryngology & Ophthalmology (2)**

This course explores all aspects of diseases of the head, eyes, ears, nose and throat, including the physical manifestation of disease, examination, laboratory and imaging evaluation, diagnosis and clinical management of associated etiologies. Cases are used throughout the course to support student integration of content into a unified approach to the patient.

**PAED.515 Pharmacology I**

Principles of clinical pharmacology essential to appropriate medical therapy are presented in an organ system-based framework. There is emphasis on the action, absorption, metabolism, excretion and toxicity of the medications within the major groups of drugs used in medicine. Pharmacotherapy for common medical problems is emphasized and reviewed in clinical case discussions.

**PAED.520 Pharmacology II**

This course is a continuation of PAED 515, Pharmacology I. Principles of clinical pharmacology essential to appropriate medical therapy are presented in an organ system-based framework. Clinical therapeutic applications and continued review of selected major drug categories are addressed.

**PAED.521 Prin. & Practice of Pulmonology (3)**

Signs and symptoms, evaluation methods, diagnosis, management and treatment of pulmonary disorders will be examined with attention focused on acute and chronic respiratory disturbances. Students will utilize clinical cases to integrate theory into practical management processes.

**PAED.522 Prin. & Practice of Cardiovascular Medicine (3)**

This course explores all aspects of cardiovascular medicine including the examination, laboratory and imaging evaluation, diagnosis and clinical management of associated etiologies including a directed approach to understanding the principles of electrocardiography and its applications to clinical practice

**PAED.523 Prin. & Practice of Gastroenterology & Nutrition (3)**

The Gastrointestinal/Nutrition course provides an integrated approach to understanding the pathophysiologic basis of gastrointestinal, hepatic and nutritional disorders as well as the pharmacological rationale for their therapy. At the same time, students are introduced to the clinical approach to these disorders, including physical examination, clinical, laboratory, and radiographic findings.

**PAED.524: Prin. & Practice of Nephrology & Genitourinary Medicine (3)**

Renal and genitourinary diseases are examined in this course including the physical manifestation of disease, examination, laboratory and imaging evaluation, diagnosis and clinical management of associated etiologies including acid-base balance. Cases are used throughout the course to support student integration of content into a unified approach to the patient.

**PAED.525: Prin. & Practice of Endocrinology (2)**

Manifestations, evaluation methods, diagnosis, treatment and management of endocrine system disorders are presented in this course. Students will utilize clinical cases to integrate theory into practical management processes.

**PAED.530 Evidence Based Medicine (2)**

This course introduces the concepts of evidence-based medicine using a patient oriented approach. Students learn how to conduct an online medical database search using reputable resources such as the Cochrane Database of Systematic Reviews. Learning exercises designed to critically review the relevance and validity, including the statistical significance, of results are focused in articles about therapy, diagnostics, systematic reviews, and practice guidelines.

**PAED.531 Prin. & Practice of Orthopedics & Rheumatology (3)**

This course explores all aspects of diseases of the musculoskeletal system, including the physical manifestation of disease, examination, laboratory and imaging evaluation, diagnosis and clinical management of associated etiologies. Cases are used throughout the course to support student integration of content into a unified approach to the patient.

**PAED.532 Prin. & Practice of Neurology (3)**

An integrated approach to understanding the pathophysiologic basis of disorders of the central and peripheral nervous system as well as the pharmacological rationale for their therapy is presented. At the same time, students are introduced to the clinical approach to these disorders, including physical examination, clinical, laboratory, and radiographic findings and various management methods.

**PAED.533 Essentials of Surgery (2)**

The fundamentals of surgical disease are explored with discussions on the etiology, pathophysiology, clinical manifestations and appropriate management of major and minor surgical conditions. Topics are discussed with emphasis on clinical presentation and pre- and post-operative management. Laboratory sessions are used to familiarize the student with aseptic technique and basic surgical etiquette and procedures.

**PAED.534 Essentials of Emergency Medicine (2)**

This course introduces the principles of life support technique as well as patient evaluation and the initial identification and management of acute, urgent and traumatic conditions.

**PAED.536: Essentials of Pediatrics (2)**

This course examines the physical and psychological fundamentals of normal growth and development. Focus is on the major pediatric illnesses and conditions, their signs, symptoms and treatment; immunization schedules and various medications used in the pediatric population, and the management of pediatric emergencies.

**PAED.537 Essentials of Behavioral Medicine (2)**

Basic psychiatric manifestations and how to work with both patients and families exhibiting psychological problems are examined. Topics include psychiatric diagnosis, the effect of society on behavior, the basis of drug and alcohol abuse, and basic intervention and treatment modalities.

**PAED.538 Essentials of Obstetrics & Gynecology (2)**

This course presents the fundamental concepts of diagnosing and treating obstetric and gynecologic patients. Emphasis is on patient presentation,



labs/diagnostics, disease prevention and patient education. Perinatal evaluation and care are also introduced.

**PAED.540 Internal Medicine (4)**

Six weeks. Students actively participate in all aspects of direct patient care in inpatient and/or outpatient adult medicine. This fundamental clinical experience places emphasis on patient evaluation and assessment, oral and written case presentations, understanding the complexities and interrelationships of disease processes and diagnostic and therapeutic collaboration.

**PAED.542 Family Medicine (4)**

Six weeks. This clinical practicum provides the student with an opportunity to gain experience in a primary care setting with patients of all ages. This experience exposes the student to a wide range of common ambulatory care problems.

**PAED.551 General Surgery (4)**

Six weeks. This clinical experience provides exposure to concepts and principles that characterize the practice of general surgery. Students participate in the pre-operative, operative and post-operative care of patients admitted to a variety of surgical services in both inpatient and outpatient settings.

**PAED.560 Pediatrics (4)**

Six weeks. Practical clinical experience in the recognition and management of common pediatric problems is provided, including assessment of the newborn, well baby care, preventive pediatrics and parent counseling.

**PAED.575 Women's Health (4)**

Six weeks. This clinical experience encompasses the fundamentals of women's health. Emphasis is on the medical history, physical examination, diagnosis and treatment involved with pre-natal, post-natal and general gynecologic care.

**PAED.580 Emergency Medicine (4)**

Six weeks. This clinical experience includes the management of acute medical and surgical problems with an emphasis on the importance of precise diagnosis as well as the principles of emergency therapy.

**PAED.586 EBM Clerkship (4)**

Six weeks. Students choose their clinical specialty and critically review one area of the medical literature based on a clinical question of interest. They develop a project that includes concepts of evidence-based medicine in relation to their clinical question and their clinical experience.

**PAED.593 Clinical Elective (4)**

Six weeks. Many specialty options are available for this elective experience. Specific clinical disciplines may be chosen based upon special interests of the student or upon what he or she determines would best augment existing clinical knowledge and skills.

**PAED.600 Senior Seminar (1)**

This course focuses on content that assists students as they transition to the role of PA professional and health care provider. Preparing for boards, licensure, credentialing and employment are included. It also provides components to determine academic and professional readiness for graduation, sitting for the board exam and attending patients.

**PAED.TBA: (optional) Post-Graduate Mini-Residency (0-3)**

Upon program completion, graduates have the option of continuing their clinical training in a 8-15 week post graduate mini-residency. This additional clinical experience allows students to enhance their knowledge and skills and develop expertise in a medical or surgical field of their choice.

## Graduate Offerings in the School of Medicine

**Philip O. Alderson, M.D.,**  
*Collegiate Dean*

Besides contributing in particular to the first two years of the Doctor of Medicine degree curriculum, the pre-clinical, medical-science departments offer post baccalaureate work leading to the Ph.D. degree. A total of five offerings, each affiliated with an individual department or center, is available; however, most students admitted for direct Ph.D.-degree study take a common, first-year core in the basic biomedical sciences. Furthermore, studies toward the Ph.D. degree in a medical-science field may be combined with the M.D.-degree curriculum, and the two degrees pursued concurrently by selected students. The M.S. (Research or non-Research) and Ph.D degrees are also offered by the Center for Anatomical Science and Education.

## BASIC BIOMEDICAL SCIENCE

**Willis K. Samson, Ph.D.,**  
*Graduate Program Director*

Admission to all Ph.D. degree programs in the biomedical sciences is by application to the core graduate program in Basic Biomedical Science. This interdisciplinary offering is intended for all students who are interested in biomedical research and/or teaching careers. Its objectives are to provide students with a strong foundation in all aspects of basic biomedical science and the freedom to explore diverse research opportunities during the first year of graduate training. The first-year curriculum combines lectures, small group discussion sessions, and seminars to develop self-confidence and familiarity with a breadth of biomedical science and technology that spans the disciplines of anatomical, biochemical, cellular, molecular, developmental, genetic, and physiological sciences. At the end of this integrated first-year program, students select a dissertation research topic and mentor, and enter into one of four departmental graduate programs in the School of Medicine [Biochemistry and Molecular Biology; Molecular Microbiology and Immunology; Pathology; Pharmacological and Physiological Science]. The subsequent requirements for completion of the Ph.D. degree vary with the individual program and include specialized advanced courses and the performance of original research leading to completion of the dissertation.

### Required Courses

BBS.501 Basic Biomedical Science I;  
 BBS.502 Special Topics in Basic Biomedical  
 Science I;  
 BBS.503 Basic Biomedical Science II;  
 BBS.504 Special Topics in Basic Biomedical  
 Science II; and  
 BBS.510 Responsible Conduct in Research.

#### **Additional Requirements**

BBS.592 Basic Biomedical Science Colloquium  
 (both semesters) and  
 BBS.597 Introduction to Basic Biomedical  
 Research (both semesters).

#### **COURSE DESCRIPTIONS**

##### **BBS.501 Basic Biomedical Science I (5)**

Prerequisites: Admission into the common first year biomedical sciences graduate program or permission of the Course Director. This intensive, multi-disciplinary lecture course is taught by faculty from all five doctoral programs in the medical school. The lecture topics include macromolecular structure, shape and information; DNA, RNA and protein synthesis; genetics and control of gene expression; cytoskeleton, extracellular matrix, cell junctions and intracellular organelles; and pathways and control of carbohydrate metabolism. BBS.G502 is co-requisite. (Offered every Fall semester.)

##### **BBS.502 Special Topics in Basic Biomedical Science I (4)**

An intensive multi-disciplinary course designed for all biomedical graduate students. Course involves participation in small group laboratory exercises involving problem solving and critical analysis of the current scientific literature, with a particular focus on the current, state-of-the-art techniques in cellular and molecular biology. The special topics are selected to coordinate with the lecture topics in the co-requisite course BBS.G501. (Offered every Fall semester.)

##### **BBS.503 Basic Biomedical Science II (5)**

An intensive multi-disciplinary course designed for all biomedical graduate students. A continuation of BBS.501, the course topics include cell membranes and cell signaling, immunology and virology; introduction to the central nervous system; fundamental of drug action; integrative and systems biology. BBS.504 is co-requisite. (Offered every Spring semester.)

##### **BBS.504 Special Topics in Basic Biomedical Science II (4)**

An intensive multi-disciplinary course designed for all biomedical students. Course involves participation in small group exercises involving problem solving and critical analysis of current scientific literature in selected special topics, as related to the lecture topics in the co-requisite course BBS.503. (Offered every Spring semester.)

##### **BBS.510 Responsible Conduct in Research (0)**

Course covers a variety of topics relevant to the ethical aspects of conducting and reporting scientific investigations including general ethical principles, use of animals and human subjects in research, authorship, mentorship, conflicts of interest, and scientific misconduct. (Offered every Spring semester.)

##### **BBS.592 Basic Biomedical Science Colloquium (1)**

Students are introduced to the techniques of critical data analysis and formal scientific presentation through weekly colloquia. Second-year students from the various biomedical science departments present in the Fall semester, first-year students present in the spring semester. Emphasis is placed on styles of presentation and techniques for effective communication. In the Spring semester, each student critically reviews and presents a topic from the current scientific literature at one of the weekly colloquia. All students are required to attend both the scientific presentation and a 10-15 minute discussion session that follows. (Offered every Fall and Spring semester.)

##### **BBS.597 Introduction to Basic Biomedical Research (2)**

Students are provided hands-on experience with the most modern and commonly used technologies in the biomedical sciences. The First semester course consists of a laboratory curriculum focusing on enzymology, protein purification, gene cloning and expression. In the Second semester, students

participate in four, five week rotations in faculty laboratories at the Medical School. (Offered every Fall and Spring semester.)

## **CENTER FOR ANATOMICAL SCIENCE AND EDUCATION**

**Daniel L. Tolbert, Ph.D.,**

*Graduate Program Director*

*Director, Center for Anatomical Science and Education*

**John Martin, Ph.D.,**

*Graduate Program Associate Director*

The Center for Anatomical Science and Education (CASE) offers programs leading to the Master of Science (Research), Master of Science (non-research) and Doctor of Philosophy degrees. The master's degree program prepares students for teaching in the anatomical disciplines and provides experience with fundamental anatomical research and/or teaching methodologies. The doctoral program emphasizes training in clinical human anatomy and independent research for individuals seeking careers in medical school or university teaching. Research in biological structure and function focuses on clinically relevant anatomical topics.

## **Master of Science (Research) in Anatomy**

#### **Prerequisite**

Background in biology and/or chemistry.

#### **Required Courses**

ANAT.500 Human Gross Anatomy;  
 ANAT.510 Human Histology and Ultrastructure;  
 ANAT.520 Human Embryology;  
 ANAT.530 Human Systems Neurobiology;  
 ANAT.544 Basic Research Techniques in Anatomy; and,  
 PAEH.504 General Physiology.

## **Master of Science in Anatomy**

#### **Prerequisite**

Background in biology and/or chemistry.

#### **Required Courses**

ANAT.500 Human Gross Anatomy;  
 ANAT.510 Human Histology and Ultrastructure;  
 ANAT.520 Human Embryology;

ANAT.530 Human Systems Neurobiology;  
 PAEH.504 General Physiology or ANAT.540 Human  
 Systems Physiology  
 ANAT.550 Advanced Dissections in Human Anatomy; and,  
 ANAT.588 Human Anatomy Independent Study.

## Doctor of Philosophy in Anatomy

### Prerequisite

Background in biology, chemistry, or psychology.

### Required Courses

ANAT.500 Human Gross Anatomy;  
 ANAT.510 Human Histology and Ultrastructure;  
 ANAT.520 Human Embryology;  
 ANAT.530 Human Systems Neurobiology;  
 PAEH.504 General Physiology or ANAT.540 Human Systems  
 Physiology  
 ANAT.544 Basic Research Techniques in Anatomy;  
 ANAT.630 Advanced Systems Neurobiology;  
 BBS.510 Ethics for Research Scientists; and,  
 ORES.520 Introduction to Statistics in Biomedical Science ;  
 ANAT.689 Anatomy Seminar and/or ANAT.691 Journal  
 Club

### Additional Requirements

Minimum postbaccalaureate credit-hours in preparation for preliminary degree examinations: 48. Research proposal to be submitted prior to admission to the preliminary oral examinations. *A formal minor is not permitted.*

### COURSE DESCRIPTIONS

#### Upper-Division Courses

#### Graduate Courses

##### ANAT.400 AHP Gross Anatomy (6)

##### ANAT.430 AHP Neurosciences (5)

##### ANAT.500 Human Gross Anatomy (8)

Structure and function of human body; emphasis on anatomical relationships and concepts and their functional significance; dissection required. (Offered every Spring semester.)

##### ANAT.510 Human Histology and Ultrastructure (5)

Microscopic anatomy of human body; emphasis on relationships between structure and function of tissues and organs. (Offered every Fall semester.)

##### ANAT.520 Human Embryology (2)

Prenatal human development; emphasis on correlation of normal development with development of common congenital malformations. (Offered every Fall semester.)

##### ANAT.530 Human Systems Neurobiology (5)

Structure and function of the human nervous system; emphasis on neuroanatomical relationships of functional systems and neurobiological concepts of brain mechanisms. (Offered every Spring semester.)

##### ANAT.540 Human Systems Physiology (4)

This course will be taken concurrently with the Human Histology and Ultrastructure course (ANAT.510) as part of the curriculum requirements for

a Certificate in Anatomical and Physiological Sciences. Physiology lectures will correlate with lectures and labs in ANAT 510 which together will emphasize structure and function of cells, tissues and organ systems. Physiological principles and mechanisms will be stressed. Prior permission of the Program Director is required.

##### ANAT.544 Basic Research Techniques in Anatomy (2)

Fundamental techniques and instrumentation; emphasis on principles underlying preparation of material for histological, histochemical, and ultrastructural examination and inter-pretation of results. (Offered every Fall semester.)

##### ANAT.550 Advanced Dissections in Human Anatomy (2-4)

Opportunity for students to develop advanced dissection and presentation skills for clinical human anatomy. Faculty mentor the student during both the dissections and the prosection demonstrations for enhancing the student's teaching techniques is anatomy.

##### ANAT.588 Human Anatomy Independent Study (2-4)

To help students develop teaching skills in human anatomy and becoming effective educators they are encouraged to participate in the Reinhert Center for Teaching Excellence Certificate program in the University Teaching Skills program. Completion of an independent anatomy educational project under the guidance of an anatomy faculty member. Projects will include but are not limited to anatomical dissection utilizing cadaver material, preparation of material for microscopic analysis, and/or computer programs to be used as future teaching tools.

##### ANAT.595 Special Study for Examinations (0)

##### ANAT.597 Research Topics (1-3)

Prior permission of advisor and program director required.

##### ANAT.598 Graduate Reading (1-3)

Prior permission of advisor and program director required.

##### ANAT.599 Thesis Research (0-6)

##### ANAT.5CR.90 Master's Degree Study (0)

##### ANAT.630 Advanced Systems Neurobiology (1)

This course may be taken concurrently with the Human Systems Neurobiology course. Lectures and moderated discussions of assigned journal articles will consider in greater detail the topics presented in the Human Systems Neurobiology course. (Offered every Spring semester.)

##### ANAT.632 Developmental Neurobiology (2)

Prerequisites: ANAT.530, ANAT.630, and ANAT.634. A presentation of the principles and concepts that underlie the development of the nervous system. Lectures and discussions of assigned journal articles will cover neurogenesis, neuronal differentiation, the formation of functional neural circuit and regressive phenomena during brain development. (Offered occasionally.)

##### ANAT.667 Visual Neuroscience (2)

Prerequisites: ANAT.530 and ANAT.634. Overview of visual processing, from chemical mechanism of transduction by retinal photoreceptors to anatomical and physiological correlates of visual perception in cerebral cortex. Assigned readings on analysis of receptive field properties, mechanisms of dark and light adaptation, sensation of color and control of ocular reflexes. Human visual dysfunctions included. (Offered every Spring semester.)

##### ANAT.689 Anatomy Seminar (0-1)

Selected topics in anatomy. Attendance and participation required for all M.S. and Ph.D. students. (Offered every Fall and Spring semester.)

##### ANAT.691 Anatomy Journal Club (0-1)

Selected topics in anatomy. Attendance and participation required for all M.S. and Ph.D. students. (Offered every Fall and Spring semester.)

##### ANAT.695 Special Study for Examinations (0)

##### ANAT.697 Research Topics (1-3)

Prior permission of advisor and program director required. May be repeated. Titles of topics must be registered.

ANAT.698 Graduate Reading Course (1-3)

ANAT.699 Dissertation Research (0-6)

ANAT.6CR.99 Doctor of Philosophy Degree Study (0)

# BIOCHEMISTRY AND MOLECULAR BIOLOGY

**Enrico Di Cera, M.D.**

*Department Chairperson*

**David A. Ford, Ph.D.,**

*Graduate Program Director*

Students with bachelor's degrees enter the Biochemistry and Molecular Biology graduate program after acceptance into and completion of the one-year Basic Biomedical Science core program. After receiving a firm background in the fundamentals of biomedical science and the opportunity to experience research in different laboratories during this first year, the student selects a faculty mentor and a specific graduate program. Students with master's degrees in biochemistry or related fields can apply for direct entry into the Biochemistry and Molecular Biology graduate program. Graduate training in the Department of Biochemistry and Molecular Biology includes advanced coursework, instruction in the preparation of a written research proposal, oral defense of a written proposal for dissertation research, and performance of original laboratory research leading to the Ph.D. dissertation. Flexibility is provided for optional training in secondary areas such as teaching or scientific writing.

## Doctor of Philosophy

### Prerequisites

Equivalent of an undergraduate major in chemistry, biology or a related subject.

### Required Courses

BBS.501 Basic Biomedical Science I;

BBS.502 Special Topics in Basic Biomedical Science I;

BBS.503 Basic Biomedical Science II;

BBS.504 Special Topics in Basic Biomedical Science II;

BBS.510 Ethics for Research Scientists

BCHM.623 Macromolecules: Structure, Function, and Interactions

BCHM.624 Molecular Basis of Human Disease

BCHM.625 Preparation and Evaluation of Scientific Research Proposal.

BCHM.628 Introduction to Genomics & Bioinformatics

ORES 520 Introduction to Statistics in Biomedical Sciences

### Additional Requirements

BBS.592 Basic Biomedical Science Colloquium (two semesters);

BBS.597 Introduction to Basic Biomedical Research (two semesters)

BCHM.691 Biochemistry and Molecular Biology Journal Club (two semesters).

BCHM.692 Biochemistry and Molecular Biology Colloquium (one semester).

Additional coursework in chemistry or biology may be required at the discretion of the Department Chairperson or Graduate Program Director. Program may include courses in one of the fields of preclinical medicine as electives.

### Additional Requirements for the Doctorate

Total post-baccalaureate credit-hours toward preliminary examinations for the doctorate: at least 48. A formal minor to accompany the doctoral major in Biochemistry and Molecular Biology may be taken at the discretion of the Department Chairperson. All students are expected to participate in the Biochemistry and Molecular Biology Journal Club throughout their tenure.

## COURSE DESCRIPTIONS

### Graduate Courses

**BCHM.595 Special Study for Examinations (0)**

**BCHM.5CR.90 Master's Degree Study (0)**

**BCHM.599 Thesis Research (0-6)**

**BCHM.623 Macromolecules: Structure, Function, and Interactions (3)**

Prerequisite: Permission of Instructor. Students participate in self-directed problem-solving exercises designed to provide familiarity with concepts and methodology in the analysis of enzyme catalysis, protein-nucleic acid interactions, and protein function and regulation. The course uses lectures, primary literature presentations and practical exercises to illustrate the key concepts. (Offered every Fall semester.)

**BCHM.624 Molecular Basis of Human Disease (3)**

Prerequisite: Permission of Instructor. Biochemical mechanisms, principles and concepts will be exemplified in studies of mechanisms of pathogenesis and treatments of human diseases. Lectures will be held three times per week, and students will be assigned original research articles for reading. Students will critically evaluate the assigned reading and demonstrate knowledge and appreciation of the biochemical principles underlying human diseases. (Offered every Fall semester.)

**BCHM.625 Preparation of Scientific Research Proposals (3)**

Prerequisite: Permission of Instructor. Students select a research topic outside of their dissertation area and prepare an NIH-style grant proposal. There will be lectures on grant writing strategies and weekly meetings with advisors with expertise in the area of the proposal. Students will give an oral presentation on their proposal. Proposals will be critiqued by three faculty members and the students will revise the proposals based on these critiques. (Offered every Spring semester.)

**BCHM.628 Introduction to Genomics and Bioinformatics (2)**

Prerequisites: BBS.501 and BBS.502 or consent of the Instructor. Introduces current practices in genomics and bioinformatics. Lecture topics include finding information in sequence and structure databases, protein motif and family classification, comparative genomics, and large-scale gene expression data analysis. Computer-based exercises will coordinate with lecture topics. (Offered every Spring semester.)

**BCHM.691 Biochemistry and Molecular Biology Journal Club (1)**

Prerequisite: Permission of Instructor. Once per semester, each student selects a scientific research paper in the area of enzymology, macromolecular interaction, cellular regulation, molecular biology, or genetics. An oral presentation of the scientific background, critical evaluation of the data, and conclusions is presented to the participants of the Biochemistry and Molecular Biology Journal Club. (Offered every Fall and Spring semester.)

**BCHM.692 Biochemistry and Molecular Biology Colloquium (1)**

Prerequisite: Permission of Instructor. In the first fall semester as members of the biochemistry department, students will select a scientific research paper outside the area of their dissertation topic, critically evaluate the data and conclusions and present the information to faculty and students. In preparation, students are expected to participate in the Biochemistry Journal Club (Offered every Fall semester.)

**BCHM.695 Special Study for Examinations (0)****BCHM.697 Research Topics (1-3)**

Prior permission of guiding professor and department/program chairperson required.

**BCHM.698 Graduate Reading Course (1-3)**

Prior permission of guiding professor and department/program chairperson required.

**BCHM.699 Dissertation Research (0-6)****BCHM.6CR.99 Doctor of Philosophy Degree Study (0)**

# MOLECULAR MICROBIOLOGY AND IMMUNOLOGY

**William S. M. Wold, Ph.D.,**

*Department Chairperson*

**H. Peter Zassenhaus, Ph.D.,**

*Graduate Program Director*

The Department of Molecular Microbiology and Immunology offers a graduate program in molecular microbiology leading to the Ph.D. degree. Our goal is to graduate exceptionally well-trained researchers who possess the necessary background and experience for a career in academic science or biotechnology. Research in the department is diversified. Areas of research emphasis included cell and molecular biology, virology, and immunology. Admission to the Ph.D. program in Microbiology will be by application to the graduate program in Basic Biomedical Sciences. This interdisciplinary graduate program is intended for all students who are interested in basic biomedical research and/or teaching careers. Its objectives are to provide students with a strong foundation in all aspects of basic biomedical science and the freedom to explore diverse research opportunities during the first year of graduate training. The first-year curriculum combines lectures, small group discussion sessions, and seminars to develop self confidence and familiarity with a breadth of biomedical science and technology that spans the disciplines of anatomical,

biochemical, cell, molecular, developmental genetic, and physiological sciences.

## Doctor of Philosophy

**Prerequisites**

Coursework in college physics, calculus, organic chemistry, and the biological sciences.

**Required Courses**

RMET.597 Biostatistics for Medical Sciences

BBS.501 Basic Biomedical Science I;

BBS.502 Special Topics in Basic Biomedical Science I;

BBS.503 Basic Biomedical Science II;

BBS.504 Special Topics in Basic Biomedical Science II;

BBS.510 Ethics for Research Scientists;

MB.635 Virology

MB.665 Basic Immunobiology.

**Additional Requirements**

BBS.592 Basic Biomedical Science Colloquium (two semesters);

BBS.597 Introduction to Basic Biomedical Research (two semesters);

MB.691 Microbiology Journal Club; and MB.692 Microbiology Colloquium.

Minimum postbaccalaureate credit-hours in preparation for preliminary degree examinations: 48. Research proposal to be submitted prior to admission to the preliminary oral examination.

*A formal minor is not permitted.*

**COURSE DESCRIPTIONS****Graduate Courses****MB.531 Introduction to Research Techniques and Topics (1-3)**

Students within the first year of their studies in the Department can spend a minimum of six weeks doing a research project with one or more faculty members. Projects are designed to acquaint the student with a specific line of research and to help them learn techniques and develop research skills. (Offered every semester.)

**MB.624 Advanced Topics in Immunology (2-3)**

Prerequisite: MB.665. A discussion of research publications focused on topics of current importance in molecular and cellular immunology. These may include recombination in the Ig and TCR loci; signal transduction coupled to antigen and cytokine receptors; molecular aspects of intracellular pathways in antigen processing; ligand-receptor interactions in cell-cell communications; chemokine and cytokine networks and infection; role of T cell subsets in host defense mechanisms; and immune mechanisms in pathogenesis of infectious disease. (Offered every Spring semester.)

**MB.635 Virology (3)**

A survey course in animal and human virology covering the structure, assay and identification of viruses that infect animal cells. Virus lifecycle and replication strategies and use of viruses as tools to investigate mechanisms of DNA replication, gene expression and cellular growth control. Discussion of major DNA and RNA virus families. Biological, biochemical and physical properties of oncogenic DNA and RNA tumor viruses and their interaction with cells. Role of oncogenes in normal growth control and transformation. Molecular aspects of virus pathogenesis, including cellular inflammatory and immunological responses of host cells and organisms to virus infection.

Epidemiology of acute infections and strategies for persistence including regulation of apoptosis and the cell cycle, and immune evasion. Concepts in vaccine development and antiviral therapy. (Offered every Fall semester.)

**MB.665 Basic Immunobiology (3)**

A survey course that presents fundamental concepts in molecular and cellular immunology. Topics include mechanisms in innate immunity such as Toll-like receptors, chemokine and cytokine signaling, complement and cellular responses; the genetics, biochemistry and biology of antigen recognition structures and antigen processing; T and B cell development; lymphocyte activation and cell-cell interactions in adaptive immunity; and host immune responses in infection, allergy, and autoimmunity. Emphasis on experimental approaches and some review of current literature. (Offered every Fall semester.)

**MB.675 Immunology Journal Club (2)**

An advanced topics literature survey. Students attend weekly presentations of current publications on topics in molecular and cellular immunology, vaccine development and gene therapy. Each student presents twice per semester. (Offered every semester.)

**MB.682 Advanced Topics in Virology and Cell Biology (1-3)**

Prerequisite: MB.635 or MB.650. Students meet with the Instructor once each week to discuss and analyze a research topic in virology or the relationship between viruses and their host cells. Material is taken from current research papers published in leading research journals. (Offered every semester.)

**MB.691 Microbiology Journal Club (0-1)**

Students present important research published in the biomedical literature in the Fall semester and present their own research in the Spring semester. Each DMMI student presents each semester. Required of all students every Fall and Spring semester that they are in the program.

**MB.692 Microbiology Colloquium (0-1)**

Students attend the biweekly MMI seminar series and critique the scientific presentations. One or two meetings with the course master and held each semester to discuss scientific presentation skills. Students collectively invite and host one or more seminar speakers per semester. Required of all students every Fall and Spring semester that they are in the program.

**EMB.695 Special Study for Examinations (0)**

**MB.697 Research Topics (0-3)**

Several students meet with the Instructor once a week to discuss and analyze a research topic. Material is taken for current research papers published in leading journals.

**MB.698 Graduate Reading Course (1-3)**

Prior permission of the guiding professor is required.

**MB.699 Dissertation Research (0-6)**

**MB.6CR.99 Doctor of Philosophy Degree Study (0)**

## PATHOLOGY

**Carole Vogler, M.D.,**  
*Department Chairperson*

**Jacki Kornbluth, Ph.D.,**  
*Graduate Program Director*

The graduate program in the Department of Pathology offers training in biomedical research with a strong emphasis in medically important areas including tumor biology and cardiovascular and liver pathobiology. Students will acquire knowledge of basic disease processes, learn research methodologies, and utilize state-of-the-art cell and molecular

biology techniques in preparation for research careers. In addition to the standard array of equipment necessary for performing basic biochemical and cellular biology, the Pathology Department also contains well-equipped facilities for flow cytometry, single-cell microinjection, video and confocal microscopy, laser capture microdissection, and scanning and transmission electron microscopy.

## Doctor of Philosophy

### Prerequisites

An undergraduate degree in biology or chemistry. Advanced biology coursework is recommended.

### Required Courses

BBS.501 Basic Biomedical Science I;  
BBS.502 Special Topics in Biomedical Science I;  
BBS.503 Basic Biomedical Science II;  
BBS.504 Special Topics In Biomedical Science II;  
BBS.510 Ethics for the Research Scientist; and  
PATH.501 Pathobiology.

### Additional Requirements

BBS.592 Basic Biomedical Science Colloquium (two semesters);  
BBS.597 Introduction to Basic Biomedical Research (two semesters);  
PATH.691 Molecular Pathobiology Journal Club; and  
PATH.692 Pathology Research Colloquium.

Postbaccalaureate credit hours in preparation for preliminary degree examinations: minimally 48.  
*A formal minor is not permitted.*

## COURSE DESCRIPTIONS

### Graduate Courses

**PATH.501 Pathobiology (5)**

Open to students in the Basic Biomedical Science core program and to qualified non-core graduate students with the permission of the Pathology program director. General pathobiology and the basic mechanisms of cell and tissue injury and repair. (Offered every Fall semester.)

**PATH.502 Molecular Pathobiology (4)**

A continuation of PATH.501. Pathology and pathophysiology of diseases on a cellular/molecular basis. Lecture and group discussions. (Offered every Spring semester.)

**PATH.535 Introduction to Microscopy Techniques (3)**

Lecture and laboratory course on the application of light and electron microscopic techniques in biomedical research. Hands-on experience at the microscope and practical approaches to problem solving will be emphasized. The course includes practical aspects of light, fluorescence and confocal microscopy as well as transmission and scanning electron microscopy. (Offered every other Fall semester.)

**PATH.538 Immunopathology (3)**

Prerequisites: BBS.501 and 502 or equivalent. Immunology pertaining to human diseases and animal models emphasized. (Offered occasionally.)

**PATH.691 Molecular Pathobiology Journal Club (1)**

Students and faculty present papers involving current issues in pathology.

**PATH.692 Pathology Research Colloquium (1)**

Students and faculty present their research.

**PATH.693 Special Topics in Pathology (1-3)**

**PATH.695 Special Study for Examinations (0)**

**PATH.697 Research Topics (1-3)**

Prior permission of professor and chairperson required.

**PATH.698 Graduate Reading Course (1-3)**

Prior permission of professor and chairperson required.

**PATH.699 Dissertation Research (0-6)**

**PATH.6CR.99 Doctor**

## PHARMACOLOGICAL AND PHYSIOLOGICAL SCIENCE

**Thomas C. Westfall, Ph.D.,**

*Department Chairperson*

**Mark M. Voight, Ph.D.**

*Vice-Chairperson*

**Joseph J. Baldassare, Ph.D.,**

*Graduate Program Director*

The graduate program in the Department of Pharmacological and Physiological Science is designed to prepare students for a career in research and teaching in this area of biomedical science. The program combines formal coursework, advanced seminars, lab rotations and in-depth training in one of the laboratories of the Faculty. The Faculty available as mentors have diversified backgrounds in the fields of biochemistry, molecular biology, neuroscience, pharmacology and physiology. Major areas for research specialization include neurotransmitter biochemistry, physiology and pharmacology; molecular biochemistry and molecular pharmacology of neurotransmitter, autacoid, neurohormone and hormone receptors and their signaling mechanisms; electrophysiology; neurochemistry; cardiovascular control mechanisms; molecular cellular and endocrine control mechanisms, neuropharmacology, and pharmacology of drugs of abuse.

### Doctor of Philosophy

#### Prerequisites

Background in biology, chemistry (general and organic; physical chemistry recommended, but not required), physics, and mathematics (including calculus). Deficiencies in the background requirements may be made up early during graduate study if an applicant is otherwise acceptable for admission into the program.

#### Required Courses

BBS.501 Basic Biomedical Science I;

BBS.502 Special Topics in Basic Biomedical Science I;

BBS.503 Basic Biomedical Science II;

BBS.504 Special Topics in Basic Biomedical Science II;

PPY.511 Advanced Topics in Pharmacological and Physiological Science I;

PPY.512 Selected Topics in Pharmacological and Physiological Science I;

PPY.513 Advanced Topics in Pharmacological and Physiological Science II; and

PPY.514 Selected Topics in Pharmacological and Physiological Science II.

#### Additional Requirements

BBS.592 Basic Biomedical Science Colloquium (two semesters);

BBS.597 Introduction to Basic Biomedical Research (two semesters);

PPY.680 Pharmacological and Physiological Science Seminar; and

PPY.691 Pharmacological and Physiological Science Journal Club.

Participation and attendance required in the Seminar and Journal Club during entire tenure of residency, whether or not student is formally enrolled in them.

*A formal minor at the Master's level is not permitted.*

Additional Requirements for Doctor of Philosophy degree:

Competency in statistics; knowledge of ethical conduct of research and rotation through research laboratories during the first year.

Credit hours in preparation for preliminary examinations total 48 minimum if degree pursued directly from the baccalaureate.

*A formal minor is not permitted*

### COURSE DESCRIPTIONS

#### Graduate Courses

**PPY.511 Advanced Topics in Pharmacological and Physiological Science I (4)**

Prerequisite: Permission of Instructor. An intense course integrating pharmacology and physiology. Topics to be covered will include general principles of pharmacology and cell physiology and an in-depth, integrative study of the cardiovascular, renal, respiratory, gastrointestinal and autonomic nervous systems. (Offered every Fall semester.)

**PPY.512 Selected Topics in Pharmacological and Physiological Science I (2)**

Prerequisite: Permission of Instructor. A companion course to PPY.511. Course involves participation in small group exercises in problem solving, laboratory sessions and critical analysis of the current scientific literature in selected special topics that are related to the lecture topics in the co-requisite PPY.511 course. (Offered every Fall semester.)

**PPY.513 Advanced Topics in Pharmacological and Physiological Science II (4)**

Prerequisite: Permission of Instructor. An intense course integrating pharmacology and physiology. Topics to be covered will include an in-depth, integrative study of the physiology and pharmacology of the endocrine and central nervous systems, as well as an introduction to the physiology and pharmacology of cancer. (Offered every Spring semester.)

# THE SCHOOL OF NURSING

**Teri Murray, Ph.D.**

*Dean*

**Rita Wunderlich, Ph.D.**

*Prelicensure Programs, Director*

**Mary Lee Barron, Ph.D.**

*Advanced Nursing Practice Programs, Director*

**Andrew C. Mills, Ph.D.**

*Ph.D. Nursing Program, Director*

The School of Nursing is fully accredited by the Commission on Collegiate Nursing Education and approved by the Missouri State Board of Nursing. To achieve its educational objectives, the School utilizes the hospitals within the Health Sciences Center and many health care organizations of greater St. Louis. In addition to its undergraduate offerings, programs leading to the Master in Nursing (prelicensure), Master of Science in Nursing, ] Doctor of Nursing Practice, and Ph.D. degrees, and a post-Master's certificate offering, are available through Graduate Education.

The Master in Nursing degree is a prelicensure program to educate advanced generalist nurses for clinical practice and leadership in health care settings. The program prepares individuals who have non-nursing baccalaureate degrees to take the National Council Licensing Exam (NCLEX) for practice as a registered professional nurse. In addition, on completion of the program, graduates will be eligible to sit for the clinical nurse leader exam offered by American Association of Colleges of Nursing Commission on Nurse Certification.

The Master of Science in Nursing (M.S.N.) degree program enables nurses to attain specialized knowledge and skills needed to implement leadership roles in advanced nursing practice. A range of specializations may be pursued at the M.S.N. or certificate level. All specializations are available online. The Post-Master of Science in Nursing certificate program provides opportunities for individuals who have earned a Master's degree in Nursing to prepare for advanced practice in a second nursing specialty or role.

The Doctor of Nursing Practice (DNP) prepares nurses as advanced practice nurses with the specialized knowledge and skills needed to diagnose and manage health and illness and improve the quality of health care in all practice settings using evidence and outcome-based methodologies. DNP graduates promote the value of the human person, clinical expertise, and patient-centered care with an emphasis on interdisciplinary collaboration within the health care delivery system.

The Ph.D. degree program prepares nurses as scholars and skilled researchers who will contribute to the continued development of the discipline and profession of nursing. Two

**PPY.514 Selected Topics in Pharmacological and Physiological Science II (2)**

Prerequisite: Permission of Instructor. A companion course to PPY.513. Course involves participation in small group exercises in problem solving, laboratory sessions and critical analysis of the current scientific literature in selected special topics that are related to the lecture topics in the co-requisite PPY.513 course. (Offered every Spring semester.)

**PPY.595 Special Study for Examinations (0)**

**PPY.599 Thesis Research (0-6)**

**PPY.5CR.90 Master's Degree Study (0)**

**PPY.600 Pharmacological Principles of Human Therapeutics (2)**

Prerequisite: Permission of instructor. Selected topics and readings in human therapeutics. (Offered occasionally.)

**PPY.601 Pharmacology and Physiology of the Cardiovascular System (4)**

Prerequisite: Permission of instructor. Represents current thinking and concepts of cardiovascular science. Special emphasis is placed on the various control systems in normal and pathophysiological conditions, as well as interactions of drugs and physiological concepts ranging from the molecular level to highly integrative systems. Meets two days a week for one semester. (Offered occasionally.)

**PPY.655 Signal Transduction Mechanisms (4)**

Prerequisite: Permission of instructor. This course covers the mechanisms of action of hormones, neuromodulators and drugs at the cellular, biochemical and molecular levels. The major classes of receptors, signal transduction pathways, and effector systems will be covered in a comprehensive manner. Historical breakthroughs as well as our current understanding of mechanisms will be examined. As an advanced graduate course, the methodology used to elucidate and evaluate these mechanisms will be stressed. Meets two days a week for one semester. (Offered occasionally.)

**PPY.666 Pharmacology and Physiology of the Nervous System and Selected Topics in Neuropharmacology (4)**

Prerequisite: Permission of instructor. This course represents current thinking and concepts involving the action of drugs on the nervous system. Special emphasis is placed on the function of neurotransmitters and neuromodulators in normal and pathophysiological conditions as well as the interaction of drugs and physiological concepts ranging from the molecular level to highly integrative systems. Meets two days a week for one semester. (Offered occasionally.)

**PPY.680 Pharmacological and Physiological Science Seminar (0-1)**

**PPY.691 Pharmacological and Physiological Science Journal Club (0-1)**

**PPY.695 Special Study for Examinations (0)**

**PPY.697 Research Topics (1-3)**

Prior permission of guiding professor and department/program chairperson required.

**PPY.698 Graduate Reading Course (1-3)**

Prior permission of guiding professor and department/program chairperson required.

**PPY.699 Dissertation Research (0-6)**

**PPY.6CR.99 Doctor of Philosophy Degree Study (0-1)**



options exist for the Ph.D. degree: an academic-year/on-site option (admission in even-numbered years) and a summers-online option (admission in odd-numbered years). Online Ph.D. courses are offered “live” using interactive, audiovisual Web technologies.

## Master in Nursing (Prelicensure)

### Prerequisites

A baccalaureate degree from an accredited university. Completion of coursework in microbiology, human anatomy and physiology, and inferential statistics.

### Required Courses

NURS 460, Pharmacology in Nursing Practice;  
IPE 490, Integrative Interprofessional Practicum Experience;  
NURS 501, Nursing Strategies for Health;  
NURS 503, Ethics in Nursing and Health Care;  
NURS 508, Advanced Pharmacology;  
NURS 510, Nursing Strategies in Physiological Health Alterations;  
NURS 515, Nursing Strategies in Psychosocial Health Alterations;  
NURS 517, Advanced Pathophysiology;  
NURS 518, Advanced Health Assessment for the Generalist Nurse;  
NURS 521, Evidence-Based Practice for the Advanced Generalist Nurse;  
NURS 530, Clinical Studies I;  
NURS 538, Clinical Studies II;  
NURS 539, Clinical Studies III;  
NURS 549, Advanced Clinical Studies;  
NURS 550, Informatics and Quality Improvement;  
NURS 560, Clinical Nursing Leadership for Advanced Generalists;  
NURS 561, Practicum in Clinical Leadership.

## Master of Science in Nursing

Specialties are available in Adult-Gerontological, Family, and Psychiatric-Mental Health Nursing, and Nursing of Children. Role preparation as a clinical nurse specialist/case manager is offered in Psychiatric-Mental Health Nursing. Role preparation as a nurse practitioner is offered in Adult-Gerontological combination, Family, Psychiatric-Mental Health Nursing, and Nursing of Children. Nurse-practitioner tracks in the Adult-Gerontological Nursing specialty include both acute-care nurse practitioner and adult-gerontological nurse-practitioner tracks. Educator tracks are available in all specialties.

### Prerequisites

A baccalaureate degree in nursing from a program accredited by a nationally recognized accrediting agency is preferred. Nurses with non-BSN baccalaureate degrees may be considered for admission.

Completion of a three-semester-hour introductory statistics course.

Unencumbered registered nurse licensure in the State of Missouri or in other state in which the student will complete his/her practica. (International applicants are advised to begin this process one year prior to the intended enrollment date.)

Completion of a beginning-level-health assessment course or the equivalent thereof is required.

One year of clinical nursing experience prior to enrollment in a clinical nursing course is strongly recommended. One year of nursing practice experience within the last three years is strongly recommended for all Nurse Practitioner tracks.

## Curriculum MSN Curriculum

**All students complete 20 credits of core courses that include:**

- NURS 503, Ethics in Nursing and Health Care (2)
- NURS 508, Advanced Pharmacology (3)
- NURS 511, Advanced Health Assessment & Clinical Decision Making (3)
- NURS 514, Health Promotion (3)
- NURS 516, Principles of Practice Management (3)
- NURS 517, Advanced Pathophysiology (3)
- NURS 520, General Research Methods (3)
- NURS 590, Residency (0)

**Acute Care Nurse Practitioner (Core courses +)**

- Cognate: NURS 531, Critical Appraisal of Technology: Acute Care
- Elective
- NURS 526, Advanced Clinical Studies in the Acute Care Setting I
- NURS 527, Advanced Clinical Studies in the Acute Care Setting II
- NURS 581, Nursing Practicum
- NURS 595, Special Study for Exams

**Total MSN Degree 38 credit hours**

**Adult-Gerontological Nurse Practitioner (Core courses +)**

- Cognate: NURS 575, Care of the Elderly: An Interdisciplinary Approach to Health
- Cognate: NURS 576, Multisystem Disorders: Complex Management
- NURS 524, Advanced Clinical Studies I: Adult and Older Adults
- NURS 525, Advanced Clinical Studies II: Adults and Older Adults
- NURS 581, Nursing Practicum
- NURS 595, Special Study for Exams

**Total MSN Degree 39 credit hours**

**Family Nurse Practitioner (Core courses +)**

- Cognate: NURS 563, Dynamics of Family Nursing Practice
- NURS 524, Advanced Clinical Studies I: Adults, and Older Adults
- NURS 529, Advanced Clinical Studies II: Women and Children
- Elective
- NURS 581, Nursing Practicum
- NURS 595, Special Study for Exams

**Total MSN Degree 39 credit hours****Pediatric Nurse Practitioner (Core courses +)**

- Cognate: NURS 555, Family and Child Development
- NURS 532, Advanced Clinical Studies I in Nursing of Children
- NURS 533 Advanced Clinical Studies II in Nursing of Children
- Elective
- NURS 581, Nursing Practicum
- NURS 595, Special Study for Exams

**Total MSN Degree 38 credit hours****Psychiatric/Mental Health Clinical Nurse Specialist/Case Manager Role Psychiatric/Mental Health Nurse Practitioner Role (Core courses +)**

- Cognate: NURS 540, Ecological Approach to Human Behavior
- NURS 534, Advanced Clinical Studies I : P/MH Nursing
- NURS 535, Advanced Clinical Studies II : P/MH Nursing
- Elective
- NURS 581, Nursing Practicum
- NURS 595, Special Study for Exams

**Total MSN Degree 39 credit hours****Educator Option**

The Nurse Educator courses provide an opportunity for course work and practicum experience in nursing education.

- NURS 557, Curriculum Development in Nursing Education
- NURS 558, Instructional Strategies and Evaluation for Nurse Educators
- NURS 559, Practicum in Nursing Education

An additional 3 credit Education course may be added so that the student may apply for the NLN Nurse Educator certificate.

## Post-Master's Certificate

Preparation in a second specialty or for a second role is offered to individuals who have earned Master's degrees in Nursing. Specialties in which preparation is available are the same as those in which Master's degrees are offered.

Preparation is currently available for a second role as psychiatric clinical nurse specialist/case manager; or acute care, adult-gerontological, family, pediatric, or psychiatric/mental health nurse practitioner. A certificate may be earned by completing a focused program of study that includes a minimum of 15 semester hours.

**Prerequisites**

Master of Science degree in nursing from a program accredited by a nationally recognized accrediting agency is preferred.

Registered professional nurse licensure in the State of Missouri or in other states in which the student will complete his/her practica.

Additional prerequisites are specific for the role option chosen by the student. Please contact the Director of the Master's program in Nursing for additional prerequisites.

**Required Courses**

Course work is dependent upon the requirements for the specific specialty or specific role.

**Master of Science in Nursing Degree and Post-Master's Certificate Online Programs**

Complete master's degree programs and post-master's certificate programs are available online through the World Wide Web for the adult-gerontological, acute care, family, pediatric, and psychiatric/mental health nurse practitioner and psychiatric/mental health clinical nurse specialist options.

## Doctor of Nursing Practice

**Prerequisites**

A master's degree in Nursing from a nationally accredited program; Current unencumbered registered professional nurse licensure in state in which clinical experience will be done; evidence of high potential for scholarship and leadership in nursing; Certification as a nurse practitioner (NP) in at least one of the nursing specialties that the School of Nursing offers as an MSN degree (i.e. acute care NP, adult NP, gerontological NP, family NP, pediatric NP, or psychiatric/mental health NP. - OR - Certification as a Clinical nurse specialist (CNS) with national and/or state recognition will be individually evaluated according to specialty and functional role; Recognition as an advanced practice registered nurse (APRN) in the state in which clinical experience will be done; Inferential or Biostatistics or equivalent within the past 5 years.

**Required Courses****DNP courses**

Required Courses (fall entry 2011)

DNP courses

NURS.700, DNP Forum (0)

NURS.500, Principles of Epidemiology (3)

NURS.710, Health Care Policy and Advanced Practice Nursing (3)

NURS.711, Health Care Delivery Systems (3)

NURS.713, Interprofessional Collaboration (3)

NURS.714, Leadership in Health Care (3)

NURS.715, Clinical Informatics (2)

NURS.716, Evidence Based Practice I (3)

NURS.717, Evidence Based Practice II: Methods and Techniques (3)

NURS.718, Capstone Project Management (2)

NURS.789, DNP Clinical and Capstone Project (3)

## Doctor of Philosophy

### Prerequisites

A master's degree in Nursing from a nationally accredited program; Current registered professional nurse licensure in Missouri (or eligibility for licensure in the State); evidence of high potential for scholarship and leadership in nursing; research interests that are congruent with the research expertise of the faculty; and NURS 625 Applied Univariate Statistics for Nursing Research (or its equivalent).

### Required Courses

NURS.600 Theory Development in Nursing;  
 NURS.601 Research Issues in Health Promotion, Disease Prevention, and Reduction of Health Disparities;  
 NURS.602 Measurement of Nursing Variables;  
 NURS.603 Nursing Issues and Leadership Strategies;  
 NURS.604 Research Issues in the Care of Acutely and Chronically Ill Populations;  
 NURS.609 Quantitative Methods in Nursing Research;  
 NURS.610 Qualitative Methods in Nursing Research  
 NURS.612 Issues of Scientific Integrity in Nursing and Health Research;  
 NURS.613 Nursing Knowledge Development: Philosophical Perspectives;  
 NURS 650 Applied Multivariable and Multivariate Statistics in Behavioral Science;  
 A research-methods elective; and  
 A concentration related to nursing or the nurse faculty role option: nine credit-hours.  
*Students may pursue a formal minor in an area of concentration related to nursing*

## COURSE DESCRIPTIONS

### Graduate Courses

#### IPE.490 Integrative Interprofessional Practicum Experience (2)

(Successful completion of core IPE courses or with permission of instructor.) This course is designed to provide students with a learning experience focused upon client system centered care as members of an interprofessional team. The purpose of the team will be to provide education, consultation, and/or direct care for medically underserved individuals/families using an interprofessional plan of care. The interprofessional team will identify a pertinent health-related issue with their chosen population. They will cooperate, collaborate, communicate, and integrate in order to provide a holistic approach to care. Each professional will use his or her knowledge and expertise to maximize the productivity of the interprofessional team to improve health outcomes. Seminars will provide opportunities for students to discuss and reflect on how service activities express the professional obligation to work as change agents for a more just society.

#### NURS.460 Pharmacology in Nursing Practice (3)

This course develops the student's knowledge of the nurse's role and responsibilities in drug therapy based on application of concepts from nursing and pharmacology sciences. Legal, ethical, and life span considerations will be presented as they apply to the nurse's role in drug therapy. The student will have the opportunity to study groups of drugs using a structured, systematic approach that includes general principles of drug activity, major actions, therapeutic effects, and adverse reactions. The student will learn to apply the

nursing process to the care of the patient receiving drugs in a variety of clinical situations. (Offered every fall)

#### NURS.500 Principles of Epidemiology (3)

This course provides an introduction to epidemiology, which is the comparative study of the distribution and determinants of disease in human populations. This course will focus on common applications of epidemiologic principles and methods for measuring disease frequency and for designing studies to identify causal factors that can be modified or eliminated to prevent or control adverse health outcomes in human populations. (Offered every summer.)

**NURS.501 Nursing Strategies for Health Promotion (2)** This course introduces the advanced generalist student to nursing and the role of nurses in promoting the health of individuals, families and communities. The social, legal, ethical, cultural and interprofessional context of clinical decision making in nursing is discussed. The nursing process is presented; clinical decision-making to promote health is emphasized. Nursing interventions to promote health will be introduced and practiced in the laboratory setting. The determinants of health in individuals, families and communities will be explored. Health promotion in special populations will be investigated in classroom and field experiences

#### NURS.503 Ethics in Nursing and Health Care (2)

This course offers an overview of ethical theory, principles, and norms which should inform professional nursing practice. The meaning of nursing as a profession is studied as a source of ethical obligation for the nurse. Cases which arise in the practice of nursing are analyzed and evaluated in light of the identified ethical theory, principles, and norms. (Offered every semester.)

#### NURS.505 Theoretical Foundations of Nursing Practice (3)

Theories and models relevant to advanced nursing practice are analyzed. Innovation, change and decision-making theories/models are explored in the context of a systems perspective as applied to nursing and the management of resources. Selected nursing, learning, and role theories will also be explored. (Offered spring and summer; last offering summer, 2011.)

#### NURS.508 Advanced Pharmacology (3)

The course focuses on concepts, principles, and application of pharmacotherapeutics used by advanced-practice health-care providers in the management of health problems. Emphasis is placed on the action, absorption, metabolism, excretion, and toxicity of the major classes of drugs used in clinical practice. Lifespan considerations that affect management are included. (Offered spring and fall)

#### NURS 510 Nursing Strategies in Physiological Health Alterations (2)

Prerequisites: Completion of fall I courses in the Masters in Nursing program. Building on concepts learned in previous courses, this course uses a lifespan approach in the study of clients experiencing alterations in health. Emphasis is placed on theoretical and evidence based knowledge as the basis for nursing strategies to promote adaptation of the individual and family. The student applies theoretical knowledge in the care of clients in simulated client settings. Field experiences provide the student with the opportunity to interact with clients in actual patient care settings. (Offered every spring)

#### NURS.511 Advanced Health Assessment and Clinical Decision Making (3)

The course focuses on the assessment and diagnostic reasoning component of the nursing process in the health care of individuals and families across the lifespan. The course integrates advanced assessment within the dimensions of the adaptation framework including advanced assessments of physical health, growth and development, and psychological, socio-cultural and spiritual health of individuals with their families, and performing comprehensive health assessments and development of advanced assessment skills. (Offered fall and spring.)

#### NURS.514 Health Promotion (3)

Selected models, mid-range theories, and tools are used to understand behavior and to identify risks to health. Evidence-based clinical prevention activities are analyzed for their use to improve the health of individuals, families, and populations. Methods for providing leadership in the conceptualization and implementation of clinical prevention and population health for individuals and populations are explored. The impact of lifestyle, cultural and environmental factors on health, and/or health disparity are

discussed. Students will evaluate health promotion/disease prevention interventions with individuals and/or groups. (Offered fall and spring.)

**NURS.515 Nursing Strategies in Psychosocial Health Alterations (4)**

Completion of fall I courses in the Masters in Nursing program. Building on concepts learned in previous courses, this course uses a lifespan approach in the study of clients experiencing psychosocial alterations in health in a variety of settings. Emphasis is placed on theoretical and evidence based knowledge as the basis for nursing strategies to promote adaptation of the individual and family. The student applies theoretical knowledge in the care of clients in simulated and actual client settings. (Offered every spring)

**NURS 516 Principles of Practice Management Credit Hours: 3 Pre-req NURS 511**

This course explores the professional and business aspects of advanced practice nursing. Concepts explored include: legal aspects of practice, cost containment, reimbursement, coding, case management, and outcomes management. Principles of advanced practice nursing management and balancing productivity with the quality of care are examined. Mentoring others in practice and the importance of being active in professional organizations are discussed. (Offered summer and fall.)

**NURS.517 Advanced Pathophysiology (3)**

Provides an in-depth study of the pathophysiological changes and responses to altered health states and their impact on the functional status of patients. Lifespan and vulnerable population considerations are integrated throughout. (Offered spring and fall)

**NURS.518 Advanced Health Assessment for the Generalist Nurse (3)**

This course focuses on the assessment & diagnostic reasoning component of the nursing process in the health care of individuals and families across the life span. The course integrates advanced assessment within the dimensions of the adaptation framework including advanced assessments of physical health, growth and development and psychological, socio-cultural and spiritual health of individuals within their families. Emphasis is placed on the performance of comprehensive health assessments and the development of advanced assessment skills. Students have the opportunity to practice assessment skills in a simulated client setting. (Offered every fall.)

**NURS.520 General Research Methods (3)**

Survey of the techniques, methods and tools of research in the behavioral sciences and social sciences. General discussion of the research process followed by examination of several different study designs such as observational, experimental, descriptive and sample survey. Overview of different methods of data collection and analysis frequently used in research literature. (Offered fall and spring.)

**NURS.521 Evidence-Based Practice for the Advanced Generalist Nurse (3)**

Prerequisite: Completion of fall I courses in the Masters in Nursing program. In this course research is introduced as a method of inquiry and as a foundation for evidence based clinical decisions. Fundamentals of research methodology will be presented. Developing, evaluating, and applying an evidence-base to address nursing care issues will be considered. The theoretical basis for research utilization, the contributions of the evidence-based practice movement, and practical instances of their application in nursing will be examined. Barriers to implementation of evidence based practice and strategies to address those barriers will be considered from an individual and an organizational perspective. Opportunities will be provided for students to gain experience in finding and applying evidence based knowledge. (Offered every spring)

**NURS.524 Advanced Clinical Studies I: Adult and Older Adult Clients (4)**

Pre- or co-requisite: NURS 508. Prerequisites: NURS 517, NURS 514, NURS 511. Relevant theories are applied in the nursing management clients with primary health care needs and/or acute or chronic illness. By using research and evidence-based practice guidelines students implement strategies in the physiological, psychosocial, cultural, and spiritual dimensions in caring for clients and their families. The practicum component provides for the integration of the nurse practitioner role in primary care. (Offered every fall semester.)

**NURS.525 Advanced Clinical Studies II: Adult and Older Adult Clients (4)**

Pre- or co-requisite: NURS 524. This course focuses on the theoretical and scientific basis for advanced nursing management of adult and older adult clients with primary health care needs and/or acute or chronic illnesses. Geriatric Syndromes and complex co-morbidity management will be addressed. By using nursing research, practice guidelines and standards, students implement strategies in the psychosocial, cultural, and spiritual dimensions in caring for elderly patients and their families. The practicum component provides for the application and integration of the advanced practice nursing in the primary care setting. (Offered every spring semester.)

**NURS.526 Advanced Clinical Studies in the Acute Setting I (4)**

Pre- or Co-requisites: NURS 508. Prerequisites: NURS 511, NURS 514, NURS 517, NURS 518, NURS 519. This course addresses short-term goals including minimizing or preventing complications, attending to co-morbidities, and promoting physical and psychological well-being. Discussion will relate to palliative care, end-of-life care, and evaluation of risk factors to address maximizing health outcomes. Specific skill sets for the Acute Care Nurse Practitioner are developed dependent upon the patient population and specialty-based area of practice. The practicum component of this course provides the nurse practitioner student the opportunity to master and apply the theory, knowledge and skills in a variety of acute care settings. (Offered every fall semester.)

**NURS.527 Advanced Clinical Studies in the Acute Setting II (4)**

Prerequisite: NURS 526. Specific concepts in this course that will be addressed are the management of adult clients with complex acute and unstable conditions in the hospital setting. Discussion will relate to the utilization of invasive interventions and procedures that promote physiologic stability in acute and life threatening conditions. In caring for patients and their families strategies in the physiological, psychological, sociocultural, and spiritual dimensions will be implemented. The practicum component of this course provides the nurse practitioner student the opportunity to master and apply the knowledge and skills in a variety of hospital subspecialties. (Offered every fall semester.)

**NURS.529 Advanced Clinical Studies II: Women and Children (5)**

Prerequisite: NURS 524. This course focuses on the theoretical and scientific bases for health promotion, maintenance and management in the primary care of women, expectant families, and children (ages 0-21 years). Well women care, family planning, and reproductive tract disorders commonly seen in primary care will be studied. Care of children with minor acute and selected stable chronic health problems will also be addressed. Trends in health care, ethical issues, and the socioeconomic and political environment of women, expectant families, and children will be analyzed to optimize the management of care. A practicum component is required. The course is designed for the family nurse practitioner role in the primary care setting. (Offered every spring semester.)

**NURS.530 Health Care Systems and Policy (3)**

This course examines the environment in which nursing and health care is provided. Health care delivery systems and the organizational theories and behaviors involved in those systems will be introduced. The effect of health care policy in determining accessibility, accountability and affordability will be investigated. Financing of health care will be discussed and basic business principles will be introduced. The role of the advanced generalist nurse in the provision of quality cost-effective care in a variety of health care systems will be emphasized. (Summer)

**NURS.531 Advanced Assessment and Application of Technology in Acute Care (3)**

Content in this course focuses on the acutely ill client with complex illness. Identification of client conditions requiring the application of technology in order to provide comprehensive assessment data or to stabilize the physiological condition are described. The evaluation of these resources and clinical outcomes are also considered. (Offered annually.)

**NURS.532 Advanced Clinical Studies I: Nursing of Children (4)**

Pre- or Co-requisites: NURS 508. Prerequisites: NURS 517, NURS 514, NURS 511. This course provides the student with the opportunity to apply knowledge and skills in the clinical management of children who are healthy or who are experiencing selected health problems. Emphasis is placed on using models and theories that guide advanced practice nursing. The focus is on the assessment and diagnosis of health risks and health problems. Therapeutic interventions will be designed to promote health for well child

care and to restore health for children who have common childhood illnesses. (Offered every fall semester.)

**NURS.533 Advanced Clinical Studies II: Nursing of Children (4)**

Prerequisite: NURS 532. This course provides the student with the opportunity to apply knowledge and skills in the clinical management of children who are experiencing selected acute and chronic health problems. Emphasis is placed on using models and theories that guide advanced practice nursing. The focus is on the assessment, diagnosis, and therapeutic interventions for children with acute and chronic illness and their families. (Offered every spring semester.)

**NURS.534 Advanced Clinical Studies in Psych Mental Health Nursing I (4)**

Pre- or Co-requisites: NURS 540, NURS 514, Prerequisites: NURS 508, NURS 517, NURS 511. This course focuses on behaviors pertinent to the role of the advanced practice nurse as a psychotherapeutic agent in holistically treating clients with acute and chronic mental health needs/problems. Selected counseling and psychotherapy theories, biopsychosocial theories, and psychiatric mental health-related concepts, issues, problems, and disorders are examined. Clinically, students use research findings, evidence-based clinical practice guidelines, practical knowledge and skills, and theories. Self-initiated academic and personal discoveries are expected. Emphasis is given to active and ongoing collaboration with clients, their families and/or significant others, and the interprofessional team. (Offered every fall semester.)

**NURS.535 Advanced Clinical Studies in Psych Mental Health Nursing II (5)**

Prerequisites: NURS 534. This course focuses on the use of pertinent theories, research, evidence-based findings, practice guidelines and standards, and interdisciplinary collaboration to holistically assess and manage complex health and mental health care needs/problems of groups and individuals across the continuum of care. Group theories and processes to effectively design, conduct, and evaluate strategies for a structured group therapy product are stressed. The performance of comprehensive psychiatric assessments/evaluations and analysis of client data to formulate differential diagnoses based on appropriate classification systems are emphasized. Students tailor their use of holistic psychotherapy modalities and intervention strategies for clients of selected populations. (Offered every spring semester.)

**NURS.537 Clinical Studies I (4)**

Prerequisites: Completion of fall I and spring I courses in the Masters in Nursing program. Using theoretical and evidence based knowledge gained in previous course work, the student will apply the nursing process to the care of patients and families experiencing acute health alterations. Students will work with preceptors in an acute care setting to develop a beginning understanding of how patient-centered care and interprofessional collaboration can result in positive adaptation for patients and families. The role of the nurse in providing safe, quality care will be discussed. (Summer)

**NURS.538 Clinical Studies II (4)**

Prerequisite: NURS 537. Applying theoretical and evidence based knowledge gained in previous course work, the student will apply the nursing process to the care of patients and families experiencing acute health alterations. Students will work with preceptors in an acute care setting to further their understanding of how patient-centered care and interprofessional collaboration results in positive adaptation for patients and families. The role of the nurse in providing safe, quality care will be examined. (Summer)

**NURS.539 Clinical Studies III (4)**

Prerequisite: NURS 538. Integrating theoretical and evidence based knowledge gained in previous course work, the student will use the nursing process to design care for patients and families experiencing acute health alterations. Students will work with preceptors in an acute care setting to promote patient-centered care, interprofessional collaboration and positive adaptation for patients and families. The role of the nurse in providing safe, quality care will be emphasized. (Offered every fall)

**NURS.540 Ecological Approach to Human Behavior (3)**

A foundation theory course in psychiatric/mental health nursing, with focus on theories basic to the nurse's role in counseling the client. The ecological model and systems, psychoanalytic, interpersonal, humanistic, cognitive, behavioral, grief, and crisis theories are analyzed in relation to advanced practicum nursing. (Offered annually.)

**NURS.549 Advanced Clinical Studies (4)**

Prerequisites: NURS 539. This course focuses on the application of evidence-based nursing care to promote safety and quality care outcomes in a specific clinical population. Particular emphasis will be placed on the assessment of risk and the development of risk reduction strategies in the selected patient population. Key issues in the management of acute and chronic illness and the promotion of health will be explored. (Offered every fall semester)

**NURS.550 Informatics and Quality Improvement (3)**

Prerequisite: NURS 530. This course examines the process for reviewing, monitoring, improving and evaluating health care services. Health services accreditation standards will be explored. The role of information technology in providing data for the documentation and evaluation of client outcomes will be emphasized. Basic principles of epidemiology will be introduced. Quality improvement models will be described. The role of the advanced generalist nurse in developing and implementing performance improvement plans will be examined.

**NURS.555 Family and Child Development (3)**

Advanced study of families during the childbearing and childrearing years. Includes consideration of normative patterns of physical and psychosocial development and factors that challenge these normative processes. Emphasizes analysis of theories and research concerning families and children. (Offered annually.)

**NURS 556 Evidence Based Approaches for the Nurse Educator (2)**

Pre-requisite: NURS 520. This course is designed to help students develop an evidence-based approach for the roles of the nurse educator in a variety of practice settings. The evidence on selected educational topics is examined and students create instructional materials based on existing evidence. Students utilize skills in locating, analyzing, integrating and presenting evidence to demonstrate teaching approaches in a selected nurse educator role. Reflective practice is highlighted and students plan for continuing professional development in the areas of discovery, integration, application, and teaching (offered annually)

**NURS.557 Curriculum Development in Nursing Education (2)**

Course focuses on program development and curriculum design in nursing. Theories of education and cognitive development, as a foundation for program preparation, will be presented. Use of mission and philosophy statements as bases of curriculum development will be explored. Students will participate in the curriculum-design process. Issues affecting curriculum design and development of curriculum outcomes will be analyzed. The evaluation process and its impact on curriculum development and implementation will be considered. (Offered annually.)

**NURS.558 Instructional Strategies and Evaluation for Nurse Educators (2)**

Students will gain experience in the development and critique of selected instructional methods for course and lesson development. Teaching-learning principles will be incorporated in the application of educational strategies relevant to clients, staff, and nursing students. Various evaluation methods will be examined. Issues in the selection of instructional strategies and evaluation methods will be discussed. (Offered annually.)

**NURS.559 Practicum in Nursing Education (2)**

Prerequisite: NURS.558: Pre or Corequisite: NURS.557. Course facilitates the graduate student's integration of educational theory and nursing knowledge. The student will participate in a teaching practicum under the guidance of an experienced nurse educator. Concurrent seminars will address topics promoting the student's role-socialization as an educator. (Offered annually.)

**NURS 561 Practicum in Clinical Leadership (6)**

Prerequisites: NURS 549. This course examines the theory and application of leadership strategies in the health care setting. Change theory and the process of making changes at the individual, unit and organizational level are examined. Leadership roles for the advanced generalist will be explored. (Offered every spring)

**NURS.563 Dynamics of Family Nursing Practice Credit Hours: 3**

This course provides the theoretical foundations for the nursing care of families within a community context. The course will emphasize analysis of theories and research concerning families. Family functioning and roles in family health care, using family assessment tools and other nursing strategies with respect to advanced nursing practice are appraised. Family dynamics that

impact family well-being and contemporary governmental, corporate and agency policies and resources that affect family functioning are examined. (Offered every fall semester.)

**NURS.568 Research Utilization and Evidence-Based Practice in Nursing (2-3)**

Developing, evaluating, and applying an evidence-base to address nursing-care issues will be considered. The theoretical basis for research utilization, the contributions of the evidence-based practice movement, and practical instances of their application in nursing will be examined. Barriers to research implementation and strategies to address those barriers will be considered from an individual and an organizational perspective, using both model-based and practical considerations. Opportunities will be provided to develop and evaluate a research utilization plan to address a clinical area of practice. (Offered every other year.)

**NURS.569 Advanced Nursing Practice for Gynecological Issues (2)**

Course will focus on gynecologic health-care issues for advanced nursing practice. Health promotion, disease prevention, and management of common disorders seen in gynecologic and primary-care settings will be examined. By using nursing research and practice standards, students will analyze strategies in the physiological, psychological, sociocultural, and spiritual dimensions in caring for women. Trends in health-care ethical issues and the sociopolitical environment of women will be analyzed to optimize care management. (Offered annually.)

**NURS.575 Care of the Elderly: An Interpersonal Approach (2-3)**

Designed to focus on an integrated approach for health care delivery to the elderly. Emphasis is on the physiological, psychological, socio-cultural, spiritual, ethical, and political/legal theoretical basis for care of the elderly. Opportunities are provided to acquire a knowledge about the elderly from the various disciplines in relation to practice, education, and research. (Offered every Spring & summer semester.)

**NURS.576 Multisystem Disorders (3)**

The focus of this course is the management of chronic complex health issues in the adult and older adult. This course will cover the management of multi-system disorders including the selection and interpretation of cardiovascular and pulmonary diagnostics; diabetic therapies, sleep disorders, movement disorders, HIV and the newest approaches to complex cancer care. (Offered every spring semester.)

**NURS 581 Advanced Practice Nursing Clinical Practicum**

(Variable 1-5; no more than 2 credits may be taken in the summer semester without permission of the Director; the intended limit is no more than 3 clinical days per week) Prerequisite: NURS 5XX (Advanced Clinical Studies in area of specialization). This course provides the student with a practicum experience that includes concentrated time in the role of the advanced practice nurse. The student assumes responsibility for the provision of health care services to selected populations under the supervision of appropriately qualified preceptors. The student assumes increasing independence and competency in assessing, planning, implementing, and evaluating health care. This course includes seminar discussions exploring the implementation of the role and functions of the advanced practice nurse. (Offered every spring, summer, and fall semester.)

**NURS.590 Residency (0)**

Occurs in the spring semester preceding NURS 581. The student is required to come to the SLU campus for onsite instruction in skills not amenable to online learning, such as suturing. The purpose of the residency is to evaluate the student's progress in the program. Depending upon the specialty, the experience is three to five days in length.

**NURS.595 Special Study for Examinations (0)**

**NURS.598 Graduate Reading Course (1-3)**

**NURS.5CR.90 Master's Degree Study (0)**

**NURS.600 Theory Development in Nursing (3)**

This course studies theory development in nursing from historical and philosophical perspectives. Students analyze the process of theory construction, including current approaches to organizing and building nursing knowledge. They also evaluate selected theoretical models in terms of their relevance for practice and research. (Offered annually.)

**NURS.601 Research Issues in Health Promotion, Disease Prevention, and Reduction of Health Disparities (3)**

Prerequisite: NURS.600. This course examines social/behavioral and health science research on promoting the state of health and risk factors associated with vulnerability to health impairment. It includes research which addresses protection of vulnerable populations from health problems and limitations of disability. Through the analysis of research, students address conceptual, theoretical, methodological, and nursing practice issues. (Offered annually.)

**NURS.602 Measurement of Nursing Variables (3)**

Prerequisite: NURS.600 and RMET.650. This course focuses on the analysis of selected mid-range theories and related research in nursing concerned with individual and family responses to health conditions. It includes study of measurement theory, quantitative methods and designs, and instrument construction and evaluation. (Offered annually.)

**NURS.603 Nursing Issues and Leadership Strategies (2)**

Prerequisite: NURS.601. This course focuses on the diffusion of innovations by nursing leaders and how historical events have influenced their innovations to shape contemporary nursing. Policy issues related to nursing and the health context of social norms and leadership theories/strategies are discussed. (Offered annually.)

**NURS.604 Research Issues in the Care of Acutely and Chronically Ill Populations (3)**

This course focuses on advanced study of evidence-based practice related to physiological and behavioral responses to acute and chronic illness. Students analyze current research to promote effective nursing care of acutely and chronically ill populations. Emphasis is on knowledge development to advance nursing as a discipline. (Offered annually.)

**NURS.609 Quantitative Methods in Nursing Research (3)**

Prerequisites: NURS.600 and NURS.613. This course examines the selection and use of quantitative methods and approaches in nursing research. It focuses on nursing research design, analysis, and knowledge generation from a quantitative perspective. Emphasis is given to writing nursing research proposals, grant applications, and the role of peer review in the research process. (Offered annually.)

**NURS.610 Qualitative Methods in Nursing Research (3)**

Prerequisites: NURS.600 and NURS.613. This course examines the philosophical and theoretical foundations of qualitative research. Its methods, designs, ethical and scientific issues are studied, including techniques of data collection, analysis, and interpretation. (Offered annually.)

**NURS.612 Issues of Scientific Integrity in Nursing and Health Research (1)**

This course discusses the historical development of principles of research ethics with particular focus on their evolution in nursing and health research. Students explore issues associated with intellectual responsibility for and avoidance of misconduct in individual work. They also explore issues of mentoring, intellectual property, and conflict of interest associated with joint work. The course augments the consideration of issues associated with research on human subjects with illustrative case studies in nursing. (Offered annually.)

**NURS.613 Knowledge Development in Nursing: Philosophical Perspectives (3)**

This course examines the development of nursing knowledge from diverse philosophical perspectives and traditions. Different conceptions of truth, knowledge, rationality, personhood, the body, and the moral good are examined as a foundation for understanding and investigating nursing phenomena. (Offered annually.)

**NURS.614 Interpretive Phenomenology: Research Method for Conducting Human Science (3)**

Prerequisite: Introductory qualitative-research course or permission of the Instructor. The course will examine phenomenology as a methodology for understanding human actions and for conducting research into human practices. The hermeneutic turn for developing knowledge for practice disciplines (e.g., education, psychology, family therapy, nursing, social work, public administration, and medicine) will be addressed together with issues and skills in conducting interpretive research. Post-modern conceptions of

validity for evaluating interpretive research will also be examined. (Offered every other Fall semester.)

**NURS.615 Applied Interpretive Phenomenology (3)**

Prerequisite: NURS 614. The course is for students who intend to use interpretive methods for their dissertation research. Students will examine primary philosophical sources for describing the methodological implications of interpretive phenomenology for studying human meanings and practices, including professional and lay caregiving.

**NURS.625 Applied Univariate Statistics in Nursing Research (3)**

This course strengthens students' knowledge of the application and analysis of univariate statistics for generating nursing knowledge. Topics include a review of probability theory, sampling theory and distributions, hypothesis testing, tests of association and independence with emphasis on univariate parametric and nonparametric statistics. Practical application is given to the use of statistical software, graphing data, coding, data management, and conducting nursing research. (Offered every other Fall semester.)

**NURS.650 Multivariate/Multivariable Statistics in Nursing Research (3)**

Prerequisite: NURS 625 or its equivalent. This course uses a general linear models approach to data analysis with multivariate/ multivariable techniques, including ANOVA/MANOVA methods for repeated measures, multiple regression, logistic regression, factor analysis, and introduction to model fitting techniques. Emphasis is given to interpretative principles of research design, statistical modeling, and analysis methods applied to nursing and clinical research rather than on specific mathematical details. (Offered every other Summer.)

**NURS.660 Research Issues in Nursing Education (3)**

Prerequisite: NURS 609 and NURS 610 or equivalents. This course presents specific approaches to conducting nursing education research in academic/classroom, clinical, and simulation/skills laboratory settings. Methods of examining learning processes and outcomes from traditional and innovative pedagogies and use of emerging technologies by nurse educators are explored. Emphasis is given to the ethical issues and analytical strategies related to conducting nursing research. (Offered every other summer or fall.)

**NURS.695 Special Study for Examinations (0)**

**NURS.697 Research Topics (1-3)**

**NURS.698 Graduate Reading Course (1-3)**

**NURS.699 Dissertation Research (0-6)**

**NURS.6CR.99 Doctor of Philosophy Degree Study (0)**

**NURS.700 DNP Forum (0)**

The purpose of the DNP Forum is to provide support for students as they progress through the DNP Program. Students will use the forum to share ideas for the development and implementation of the capstone project. The forum will provide students with a community of scholars to enhance intellectual development and address the challenges they experience as students and health care providers.

**NURS.710 Health Care Policy and Advanced Practice Nursing (3)**

This course provides an overview of health care policy and selected policy models. Ethical, legal and social factors impacting policy development are addressed. The policy making processes at the organizational, local, state, national, and international level are explored. The role of an advanced practice nurse in influencing policy in health care delivery, outcomes and professional nursing is emphasized. Students learn skills to analyze policy processes and engage in politically competent actions.

**NURS.711 Health Care Delivery Systems (3)**

This course focuses on the assessment of health care delivery systems and the organizational theories and behavior involved in those systems. System processes are examined to eliminate health disparities and promote patient safety. Trends in health care delivery models will be explored. Future possibilities of health care delivery models will be envisioned.

**NURS.712 Cost and Quality Outcomes (3)**

This course examines financial structures to support clinical practice. Students will evaluate the cost effectiveness of care and study principles of health care economics and finance for quality care outcomes. The health care

reimbursement system, budget development, staffing, forecasting, and outcome management are discussed.

**NURS.713 Interprofessional Collaboration (3)**

This course utilizes an interprofessional framework to guide the exploration of complex patient-centered care of individuals, families, communities, and vulnerable populations. Course topics include: the history of interprofessional practice, its philosophic principles, terminology, current research, team competencies, and frameworks of practice. This course consists of one 2-hour seminar each week and 1 credit hour of interprofessional clinical practice that is equal to 75 clock hours.

**NURS.714 Leadership in Health Care (3)**

This course analyzes leadership theories and spheres of influence of the advanced practice nurse in the delivery of health care. Change theory and the process of making change at an organizational/system level are examined. Students will focus on the assessment and enhancement of their leadership skills and career development. Effective leadership strategies within an organization are analyzed. The course requires 75 hours of clinical.

**NURS.715 Clinical Informatics (2)**

Information literacy and the use of computers in health care are explored. Students learn the processes for selection and evaluation of information systems and patient care technology are studied. Use of technology to analyze outcomes and examine patterns is emphasized. Information systems/decision supports and web-based learning or clinical tools are discussed to support or improve patient care.

**NURS.716 Evidence Based Practice (3)**

This course discusses the processes involved in systematic review in evidence-based practice. It prepares nurses to: critique and conduct systematic reviews and critically appraise clinical practice guidelines. The course requires 75 hours of clinical.

**NURS.717 Evidence Based Practice II: Methods and Techniques (students entering 2011) (3)**

This course builds on student's understanding of scholarly inquiry, research designs, methods, and research translation as best practices in health care. Topics include theoretical underpinnings for translational research design, needs assessment, program planning and evaluation, and application of quantitative and qualitative methods in the study of practice related phenomena. Cultural, political, and ethical issues related to translational research are addressed are consistent with Jesuit values.

**NURS.718 (students entering 2011)**

**Capstone Project Management (1-2)**

This course is designed to assist the student in refining the Capstone project in regard to the clinical research question, statistical analysis, writing the interpretation and discussion of results. The course is offered as variable credit.

**NURS.789 DNP Clinical and Capstone Project(3-4)**

This course includes 1 credit hour of seminar and 3 credit hours of clinical. The clinical requirement includes 225 hours of experience culminating in a publishable paper. This clinical experience will provide the student with the opportunity to integrate and synthesize knowledge gained throughout the program. The student's project will focus on a practice change initiative in risk reduction. Examples include: a program evaluation, a quality improvement project, evaluation of a new practice model, a consulting project, or a pilot study.

**NURS.7CR.90 Doctor of Nursing Practice Degree Study (0)**

## School of Public Health

**Edwin Trevathan, M.D., M.P.H.**

*Collegiate Dean*

The School of Public Health, founded in 1991, provides population-based undergraduate and graduate education that prepares students for private, voluntary, and public-sector careers in public health and health services practice and research. . Opportunities for dual-degree study exist with the University's Doisy College of Health Sciences, Business and Administration, Law, Medicine, and Social Work. The School is composed of five departments, Behavioral Science and Health Education, Biostatistics, Epidemiology, Environmental and Occupational Health, Health Management and Policy, as well as a Doctoral Program in Public Health Studies and Undergraduate Programs in Public Health and Health Management. Dual-degree programs are available with the School of Social Service (MPH/MSW), the School of Law (MPH/JD), the School of Medicine (MPH/MD), and the Department of Nutrition and Dietetics (MPH/MS). All MPH degree programs require a practice experience. The Master of Science (MS) degree in Biosecurity and Disaster Preparedness is offered in a distance learning format. The Master of Science in Public Health (MSPH) degree with concentrations in Epidemiology and in Behavioral Science is offered for researchers with terminal degrees (including MD, DO, DC, DDS, DVM or PhD, licensed to practice in the U.S.) who seek training in population based research methods to support their clinical research activities. The dual Master of Science degree in Public Health and doctorate in clinical psychology (MSPH/PhD) is also offered. The School of Public Health is accredited by the Council on Education for Public Health.

## Master of Public Health (MPH) and 4+1 Accelerated Baccalaureate of Science and MPH

**Prerequisites:** See individual departments.

**The following is a list of Required Core Courses for all MPH degrees, with the exception of the MPH in Health Policy offered through the Department of Health Management and Policy**

BSH.500 Behavioral Science and Public Health;  
 BST.500 Principles of Biostatistics  
 CMH.501 Foundations of Public Health  
 Practice;  
 CMH.511 Managerial Aspects of Public Health  
 Practice;  
 CMH.502 Ethical Issues in Public  
 Health;  
 CMH.592 Community Health Rounds:  
 Integrating Public Health Practice  
 CMH.594 Practice Experience in Public Health  
 CMH.595 Special Study for Examinations;  
 EOH.500 Environmental and Occupational  
 Health; and  
 EPI.500 Principles of Epidemiology  
 Most of the required core courses for the 4+1 Accelerated  
 program are completed during the student's senior year.

## Department of Behavioral Science and Health Education

**Elizabeth Baker, Ph.D., M.P.H.**

*Department Chairperson*

The following degrees are offered: MPH in Behavioral Science and Health Education (BSHE), joint MPH in BSHE and Epidemiology, Master of Science in Public Health (MSPH) in BSHE, and a dual MSPH in BSHE, and PhD in Clinical Psychology.

### **Prerequisites for the MPH in BSHE and joint MPH in BSHE and Epidemiology**

A bachelor's degree or the equivalent in a social or biomedical science, or a closely related discipline. Experience in health-related fields is highly valued.

### **Required Courses for the MPH in BSHE**

Students must complete the core curriculum and these concentration courses:

BSH.510 Health Promotion Program Planning;  
 BSH.520 Historical, Philosophical and Political  
 Bases of Public Health and Health Education;  
 BSH.531 Health Communication  
 BSH.540 Community Diagnosis;  
 BSH.600 Health Promotion Program  
 Evaluation;  
 BSH.601 Research Methods in Behavioral  
 Science; and  
 BSH.625 Capstone in Behavioral Science and  
 Health Education

At least six credit-hours of electives must be  
 taken from the concentration or related offerings.  
 The minimum total credit-hours requirement: 48.

### **Required Courses for the Joint MPH in BSHE and Epidemiology**

Students must complete the core curriculum and these  
 concentration courses:

BSH.510 Health Promotion Program Planning;  
 BSH.531 Health Communication  
 BSH.540 Community Diagnosis;  
 BSH.600 Health Promotion Program Evaluation;  
 BSH.601 Research Methods in Behavioral  
 Science;  
 BST.510 Introduction to General Linear  
 Modeling; and  
 EPI.502 Epidemiology Methods II; and  
 BSH 625 Capstone in Behavioral Science &  
 Health Education.

At least nine credit-hours of electives must be taken from the  
 concentration offerings. The minimum total credit-hours  
 requirement is 54.

### **Prerequisites for the MSPH in BSHE**



A terminal degree (including MD, DO, DC, DDS, DVM or PhD, licensed to practice in the U.S.) in the field of health or a health-related social science.

#### **Required Courses for the MSPH in BSHE**

Each student must complete the following:  
 BST.500 Principles of Biostatistics;  
 BST.510 Introduction to General Linear Modeling;  
 BST.540 Applied Data Management;  
 BSH.500 Behavioral Science and Public Health;  
 BSH.600 Health Promotion Program Evaluation;  
 BSH.601 Research Methods in Behavioral Science;  
 BSH.625 Capstone in Behavioral Science and Health Education;  
 CMH.500 Health Care Organization or  
 CMH.501 Foundations of Public Health Practice;  
 HMP.542 Health Care Ethics in a Pluralistic Society;  
 CMH.595 Special Study for Examinations;  
 CMH.596 Research Project/Essay Guidance; and  
 EPI.500 Principles of Epidemiology.  
 At least six credit-hours of electives must be taken from approved courses. The minimum total credit-hours requirement: 36

#### **Master of Public Health/Master of Social Work**

The dual degree program is designed for students who wish to study concurrently for the Master of Public Health (MPH) degree and the Master of Social Work (MSW) degree at Saint Louis University (a total of 78 credits). The Saint Louis University School of Social Work is accredited by the Council on Social Work Education. Graduates of the degree program are prepared to take positions in a variety of social service and health care settings. Applicants must fulfill all of the admission requirements for both the School of Public Health and the School of Social Work.

#### **Master of Public Health/ Master of Science in Nutrition and Dietetics**

This dual degree program is offered with the Department of Nutrition and Dietetics within the Doisy College of Health Sciences (a total of 54 credits). The purpose of this program is to prepare nutrition specialists to work in many types of public health and voluntary agencies, as well as in medical care and educational settings. Students specialize in public health and dietetics, learning to plan, organize, conduct and evaluate nutrition programs in the public health sector. Applicants must fulfill all of the admission requirements for both the School of Public Health and the Department of Nutrition and Dietetics in the Doisy College of Health Sciences, which includes a prerequisite undergraduate degree in Nutrition/Dietetics or completion of prerequisite courses in Basic Nutrition, Biochemistry, Advanced Nutrition, and Medical Nutrition Therapy.

#### **Master of Science in Public Health/Ph.D. in**

#### **Clinical Psychology**

The 6-year combined program is designed to develop scientist-practitioners of clinical psychology who can conduct research, design and evaluate programs, and inform public policy in academic research settings, health care facilities, and public health organizations. Applicants are required to be initially accepted to the graduate degree program in clinical psychology. The student must then apply for and fulfill all admission requirements for the MPPH degree program in order to gain admission to the dual degree program.

### *Department of Biostatistics*

#### **John Fu, Ph.D., M.D.**

*Department Chairperson*

The following degrees are offered: MPH in Biostatistics and a joint MPH in Biostatistics and Epidemiology.

#### **Prerequisites for the MPH in Biostatistics and the joint MPH in Biostatistics and Epidemiology**

A bachelor's degree with coursework that includes Calculus I, either Calculus II or linear algebra, introductory statistics, and basic coursework in the principles of biology and computer science. These requirements may be satisfied in the summer prior to the first fall semester.

#### **Required Courses for the MPH in Biostatistics**

The concentration in Biostatistics requires the completion of the core and these concentration courses: (BST.500 is a pre-requisite, and if taken at Saint Louis University, counts as an elective; should be taken prior to the first fall semester)

BST.502 Theory of Biostatistics  
 BST.503 Statistical Programming and Study Planning: SAS  
 BST.510 Introduction to General Linear Modeling;  
 BST.520 Survival Data Analysis;  
 BST.521 Categorical Data Analysis;EPI.502 Epidemiology Methods II; and  
 BST.625 Capstone in Biostatistics

At least twelve credit-hours of electives must be taken from the concentration offerings. The minimum total credit-hours requirement: 48.

#### **Required Courses for the joint MPH in Biostatistics and Epidemiology**

The joint concentration in Biostatistics and Epidemiology requires the completion of the core courses and these concentration courses: (BST.500 is a pre-requisite, and if taken at Saint Louis University, counts as an elective; must be taken prior to the first fall semester)

BST.502 Theory of Biostatistics;  
 BST.503 Statistical Programming and Study Planning: SAS  
 BST.510 Introduction to General Linear Modeling;  
 BST.520 Survival Data Analysis;  
 BST.521 Categorical Data Analysis;

EPI.502 Epidemiology Methods II; and  
BST.625 Capstone in Biostatistics.

At least eighteen credit-hours of electives must be taken from the concentration offerings. The minimum total credit-hours requirement: 54

## *Department of Environmental and Occupational Health*

**Roger Lewis, Ph.D.**

*Department Chairperson*

The following degrees are offered: MPH in Environmental and Occupational Health (EOH), joint MPH in EOH and Epidemiology, MPH in Biosecurity and Disaster Preparedness (BSDP), joint MPH in EOH and BSDP, a Master of Science in BSDP, Graduate Certificate in BSDP, and a professional option – practice MPH.

### **Prerequisites for the MPH in EOH and the joint MPH in EOH and Epidemiology**

A bachelor's degree in the physical, chemical, or biological sciences or six credit-hours of college level courses in chemistry, biology, and the physical sciences are recommended; however, applicants will be considered on an individual basis in the absence of these prerequisites.

### **Required EOH Courses**

Students must complete the core curriculum and the following courses in environmental and occupational health:

EOH.510 Human Toxicology and Environmental Health;  
EOH.520 Evaluation of Environmental Hazards;  
EOH.522 Occupational Safety;  
EOH.529 Environmental and Occupational Laboratory;  
EOH.540 Human Health Risk Analysis;  
EOH.530 Assessment and Control of Infectious and Biological Hazards;  
EOH.560 Policy Science and Decisions in Environmental Health; and  
EOH.625 Capstone in Environmental and Occupational Health.

At least six credit-hours of electives must be taken from the concentration offerings.

The minimum total credit-hours requirement: 48.

### **Required Courses for the joint MPH in EOH and Epidemiology**

The joint concentration in Environmental Health and Epidemiology requires the completion of the core courses and these concentration courses:

(EOH.500 should be taken in the summer prior to the start of fall classes)

BST.510 Introduction to General Linear Modeling

EOH.510 Human Toxicology and Environmental

Health;

EOH.520 Evaluation of Environmental Hazards;  
EOH.529 Environmental and Occupational Health Lab

EOH.540 Human Health Risk Analysis;  
EOH.550 Environmental and Occupational Epidemiology;

EPI.502 Epidemiology Methods II; and  
EOH 625 Capstone in Environmental and Occupational Health.

At least nine credit-hours of electives must be taken from the concentration offerings. The minimum total credit-hours requirement: 54.

### **Prerequisites for the MPH in BSDP**

A bachelor's degree or the equivalent in a social or biomedical science, or a closely related discipline. Experience in health-related fields is preferred, but is not required.

### **Required BSDP Courses**

Students must complete the core curriculum and these concentration courses:

BSDP.566 Fundamentals of Disaster Planning  
BSDP.570 Public Health & Disasters  
BSDP.572 Communicable Diseases & Infection Control  
BSDP.573 Disaster Planning for Infectious Disease Disasters  
BSDP.575 Epidemiological Methods & Infectious Disease Surveillance (substitutes for EPI.500)  
BSDP.576 Disaster Communications & Media Relations  
BSDP.578 Behavioral & Cultural Aspects of Disaster Response  
BSDP.582 Disaster Management & Risk Analysis; and  
BSDP.625 Capstone in Biosecurity & Disaster Preparedness

At least three credit-hours of approved electives must be taken.

The minimum total credit-hours requirement: 48.

### **Required courses for the joint MPH in EOH and BSDP**

The joint concentration in EOH and BSDP requires the completion of the core courses and these concentration courses:

(EOH.500 should be taken in the summer prior to the start of fall classes)

EOH.510 Human Toxicology and Environmental Health;

BSDP.575 or EPI.500 Epi Methods and Infectious Disease Surveillance or Principles of Epidemiology

EOH.520 Evaluation of Environmental Hazards;  
BSDP.582 Disaster Management and Risk Analysis;

BSDP.566 Fundamentals of Disaster Planning  
BSDP.572 Communicable Diseases & Infection Control

EOH.529 Environmental and Occupational Health Lab

EOH.540 Human Health Risk Analysis;  
 BSDP.570 Public Health & Disasters  
 BSDP.573 Disaster Planning for Infectious Disease Disasters  
 EOH 625 Capstone in Environmental and  
 Occupational Health.

At least nine credit-hours of electives must be taken from the concentration offerings. The minimum total credit-hours requirement: 54.

#### **Prerequisites for the Master of Science in Biosecurity and Disaster Preparedness**

A bachelor's degree in any discipline. Experience in health-related fields is preferred, but is not required.

#### **Required Courses for the Master of Science in Biosecurity and Disaster Preparedness**

Each student must complete the following:  
 BSDP.566 Fundamentals of Disaster Planning  
 BSDP.570 Public Health and Disasters;  
 BSDP.572 Communicable Diseases and  
 Infection Control;  
 BSDP.573 Disaster Planning;  
 BSDP.575 Epidemiological Methods and  
 Infectious Disease  
 Surveillance  
 BSDP.576 Disaster Communications and Media  
 Relations  
 BSDP.578 Behavioral & Cultural Aspects of  
 Disaster  
 Response  
 BSDP.582 Disaster Management and Risk  
 Analysis;  
 BSDP.583 Legal and Ethical Implications of  
 Disasters; and  
 BSDP.625 Capstone: Biosecurity Practicum  
 At least three credit-hours of electives must be  
 taken from approved courses.  
 The minimum total credit-hours requirement: 42.

#### **Prerequisites for the graduate certificate in Biosecurity and Disaster Preparedness**

A bachelor's degree in any discipline. Experience in health-related fields is preferred, but is not required. Certificate may be completed concurrently with a MPH degree.

#### **Required Courses**

BSDP.566 Fundamentals of Disaster Planning  
 BSDP.570 Public Health and Disasters;  
 BSDP.572 Communicable Diseases and Infection  
 Control;  
 BSDP.573 Disaster Planning; and  
 BSDP.582 Disaster Management and Risk  
 Analysis;  
 The minimum total credit-hours requirement: 15.

#### **Prerequisites for the professional option practice MPH**

A Bachelor's or Master's degree in a health or related field and substantial and relevant experience equivalent to three years in public health or health care. Satisfaction of the experience requirement is determined by the Admissions Committee.

#### **Required Courses**

Each student must complete the core courses and the following:

HMP.550 Health Policy  
 BSDP.570 Public Health & Disasters (distance  
 format)  
 HMP.537 Organizational Behavior &  
 Management; and  
 CMH.625 Capstone in Public Health Practice  
 At least nine credit-hours of electives must be  
 taken from approved courses.  
 The minimum total credit-hours requirement: 42.

#### **Master of Public Health/Juris Doctor**

The Master of Public Health/Juris Doctor dual degree program is offered in collaboration with the Saint Louis University School of Law, which is accredited by the American Bar Association (a total of 115 credits). The purposes of the program are to provide persons entering the health law field with additional training in public health and to expand advanced education in law and public health through Missouri and the surrounding region. Graduates will practice law in a variety of settings including governmental public health agencies, private law firms, and nonprofit institutions. Applicants must fulfill all admissions requirements for the MPH degree program and the School of Law to gain admission to the dual degree program.

## *Department of Epidemiology*

#### **Zhengmin Quin, Ph.D., M.D.**

*Department Chairperson*

The following degrees are offered: MPH in Epidemiology, Master of Science in Public Health (MSPH) in Epidemiology, and the dual MPH and MD.

#### **Prerequisites for the MPH in Epidemiology**

A bachelor's degree in a biomedical science, one of the social sciences or a closely related discipline. Experience in health-related fields is highly valued.

#### **Required Courses for the MPH in Epidemiology**

The concentration in epidemiology requires the completion of the core courses and these concentration courses:  
 BST.510 Introduction to General Linear  
 Modeling;  
 BST.520 Survival Data Analysis;  
 BST.521 Categorical Data Analysis;  
 EPI.502 Epidemiology Methods II; and  
 EPI.625 Capstone in Epidemiology;  
 At least twelve credit-hours of electives must be taken from the concentration offerings. The minimum total credit-hours requirement: 48.

#### **Prerequisites for the MSPH in Epidemiology**

A terminal degree (including MD, DO, DC, DDS, DVM or PhD, licensed to practice in the U.S.) in the field of health or a health-related social science.

### Required Courses for the MSPH in Epidemiology

Each student must complete the following:

BST.500 Principles of Biostatistics;  
 BST.503 Statistical Program and Study  
 Planning: SAS  
 BST.510 Introduction to General Linear  
 Modeling;  
 BST.520 Survival Data Analysis  
 BST.521 Categorical Data Analysis  
 CMH.501 Foundations of Public Health Practice;  
 CMH.595 Special Study for Examinations;  
 CMH.596 Research Project/Essay Guidance;  
 EPI.500 Principles of Epidemiology  
 EPI.502 Epidemiology Methods II; and  
 EPI.625 Capstone in Epidemiology.

At least twelve credit-hours of electives must be taken from approved courses. The minimum total credit-hours requirement: 36.

## Master of Public Health/ Doctor of Medicine

The MPH/MD dual degree program at the Saint Louis University Health Sciences Center is conducted under the joint auspices of the Schools of Public Health and Medicine. This integrated program requires completion of professional medical-school requirements as well as general and comprehensive aspects of a public health education. Graduates of the program have broadened career options and are able to draw from both sets of credentials as they practice from a foundation of interdisciplinary preparation. Individuals may apply to the MPH degree program concurrently with application to medical school or following their admission to the School of Medicine; however, admission to the dual degree program is contingent upon admissions to both the MPH and the M.D. degree programs.

### COURSE DESCRIPTIONS

#### Graduate Courses

##### **BSH.500 Behavioral Science and Public Health (3)**

This course introduces concepts, theories and methods employed by behavioral scientists to develop, plan, implement and evaluate public health interventions. Selected theories of health behavior are presented. Principles of program evaluation methodology are introduced. Emphasis is placed on the application of theory and culturally appropriate methods to the design and assessment of approaches to solving current public health problems. (Offered in the fall and spring with one on-line section.)

##### **BSH.510 Health Promotion Program Planning (3)**

Prerequisite: BSH.500 or permission of Instructor. Following general logic model frameworks and the PRECEDEPROCEED planning model, this course explores the principles, theories, and essential steps of the health promotion planning process. Content includes a detailed review of the methods used in this planning model. In this course, the process and methods of evaluation are framed in terms of "quality assurance," that is, documenting the extent to

which program actions are implemented in accordance to stated objectives. (Offered annually.)

##### **BSH.520 Historical, Philosophical and Political Bases of Public Health and Health Education (3)**

Prerequisite: BSHE Concentrator or permission of Instructor. This course engages students in critical thinking and discussion about the conceptual bases of public health and health education, including the philosophical and political ideologies which have shaped research and practice in both fields. Students completing this course will be able to critically consider public health programs and policies. (Offered annually.)

##### **BSH.531 Health Communication: Theory and Practice (3)**

Prerequisite: BSH 500 or permission of Instructor. This course provides an overview of theory and research on persuasive communication, emphasizing the application of persuasive communication principles to health education practice. Special emphasis is given to the application of new communication technologies to meet public health objectives. Students successfully completing this course will be able to analyze and critique health education and health promotion messages on the basis of theory and empirical research, and identify basic principles of persuasive communication which are applicable to health education practice. (Offered annually.)

##### **BSH.540 Community Diagnosis (3)**

Prerequisite: BSH.C500 or permission of Instructor. This course reviews the theoretical bases underlying community diagnosis and community organizing, provides students with the opportunity to develop specific skills in community diagnosis, and assists in assessing the personal and professional challenges faced when working in diverse communities. (Offered annually.)

##### **BSH.594 Internship in Behavioral Science and Health Education (0)**

Prerequisite: Permission of Internship Coordinator. This course provides supervised experience in application of community health techniques through work in a public health agency or other health care organization. (Not currently offered. All MPH students take CMH.594.)

##### **BSH.597 Research Topics in Behavioral Science and Health Education (1-3)**

Prerequisite: Permission of Instructor. This course provides direct research experience in behavioral science and health education. Content is developed jointly between the student(s) and a faculty mentor.

##### **BSH.598 Graduate Reading Course in Behavioral Science and Health Education (1-3)**

Prerequisite: Permission of Instructor. This course provides specialized study in behavioral science and health education to enhance skills in literature review and problem solving. Content is developed jointly between the student(s) and a faculty mentor.

##### **BSH.600 Health Promotion Program Evaluation (3)**

Prerequisite: BSH.500 and 510 or permission of Instructor. The course focuses on principles and procedures to evaluate health promotion and disease prevention programs. Evaluation design, reliability and validity, formative and process evaluation, and meta-analysis are introduced. The course includes intensive critique of case studies from the disease prevention program and policy literature. Case studies designed to reflect the diversity of methods and the range of possible applications are selected. (Offered annually.)

##### **BSH.601 Research Methods in Behavioral Sciences (3)**

Prerequisite: BSH.500 or permission of Instructor. This course provides an overview of selected methods used in conducting behavioral science research. The course will address all methodological aspects of behavioral science research, with an emphasis on data collection methods and survey research. (Offered annually.)

##### **BSH.602 Intervention Research (3)**

Prerequisite: PhD student and permission of Instructor. This course helps students conceptualize, design, and conduct behavioral intervention research in public health. Students are introduced to intervention research projects conducted to address a wide range of health problems and populations in community, health care, work-site and school settings. Students evaluate and critique these interventions in terms of research design and methodology, planning approach, and adherence to principles of participation. Students will design intervention-research projects to address a public-health problem of their choice. (Offered as needed.)

**BSH.611 Health Behavior Assessment (3)**

Prerequisite: PhD student and permission of Instructor. The purpose of this course is to review research and theory guiding the assessment of selected health behaviors; to integrate behavioral and physiological sciences in conducting health behavior assessments; and to emphasize assessment as a core component of the scientific approach to the development and implementation of public health interventions. The course will promote skills necessary to critically evaluate methods used to assess health behaviors from a variety of theoretical perspectives applied to health promotion and risk behavior prevention. (Not currently offered.)

**BSH.625 Capstone in Behavioral Science and Health Education (3)**

Prerequisite: BSHE concentrator or permission of Instructor. Theory is a fundamental conceptual tool in the design and assessment of public health programs. Students will learn to critically assess relevant theories and evidence in relation to specific public health problems, and will be trained in the application of theory to inform and benefit program planning, development, implementation, and evaluation. (Offered annually.)

**BSDP.561 Biosecurity and Safety for Laboratories (3)**

This course reviews the use and handling of biological materials in research and clinical laboratories in which there is potential for exposure to infectious agents. Particular attention will be placed on the use of live viruses where there is a need for extreme caution because they frequently cause animal and human diseases. (Not currently offered.)

**BSDP.562 Bioterrorism and Emerging Infectious Diseases (3)**

This course introduces bioterrorism and emerging infectious diseases, including the rationale for using biological weapons, genetic engineering, and surveillance. Disease transmission simulation and patient moulage will be used. Emerging infectious diseases (SARS, avian influenza, TB, MRSA, Mumps and Pertussis), anti-infective therapy and vaccine, and pandemic planning will also be covered. (Not currently offered.)

**BSDP.563 Global Terrorism in the 21st Century (3)**

This course provides a comprehensive review of the global threat posed by the growth of violence in fundamentalist movements with a focus on violent Islamic fundamentalism (VIF) and its implications for public health security and preparedness. A historic overview of Islamic fundamentalism that traces its evolution, motivation, recruiting strategies, funding sources, and spread from the Mid East to Asia, Africa, Malaysia, the Philippines, and South America will be covered. The course will also explore the relationship of the Arab- Israeli conflict to the propagation of VIF. The history, geopolitical motivations of state sponsorship, intraorganizational relationships, leadership and current technical capabilities of Hamas, Hezbollah, and al Qaida will also be reviewed. (Not currently offered.)

**BSDP.564 Public Health and Medical Intelligence (3)**

This course introduces students to the rationale for the emerging role of the public health and medical communities in the intelligence gathering, analysis and dissemination process. Focusing on early detection of emerging physical threats and novel/emerging infectious diseases it will give the students the requisite knowledge and skills to provide the homeland security community with threat indications and warnings. Students will be given the analytical tools to allow them to gauge the impact of physical threats that would result in mass casualties and novel/emerging infectious diseases. They will be expected to develop and recommend rational and viable courses of action to those threats. (Offered annually.)

**BSDP.565 Threat Characterization and Response Using Statistics Decision Analysis Tools (3)**

This course provides the basic practical tools for analyzing a threat scenario using problem-based learning of standard statistical methods, culminating in application of those methods in decision analysis for informing policy makers of threat prioritization and the means to mitigate those threats as applied specifically to the general category of bioterrorism problems. (Offered annually.)

**BSDP.566 Fundamentals of Disaster Planning (3)**

This course provides an overview of strategies for and challenges to planning for all types of disasters. All phases of the emergency management model will be addressed: mitigation, preparation, response, and recovery. Content

includes tools and resources needed to develop and/or evaluate a facility or community all-hazards response plan and create exercises to test this plan. (Offered annually.)

**BSDP.570 Public Health and Disasters (3)**

Introduces the growing threat and potential public health consequences of all types of disasters. Content includes an introduction to public health and public health's role in disaster preparedness and response. In this course, threats to public health are introduced. Intentional disasters (chemical, biological, and radiological terrorism) & natural disasters are covered; emphasis is placed on infectious disease emergencies such as biological terrorism and emerging infections. (Offered annually.)

**BSDP.571 Terrorist Organizations and Their Motivations (3)**

This course is designed to provide students a broad understanding of terrorist organizations and their motivations. History of terrorism, current movements and organizations (both domestic and international) will be covered. Emphasis will be placed on terrorist use of chemical/biological/radiological/nuclear weapons of mass destruction. (Offered annually.)

**BSDP.572 Communicable Diseases & Infection Control (3)**

This course teaches the fundamentals of communicable diseases. Content includes this microbiology of contagious pathogens, disease transmission, and infection control measures to prevent or stop the spread of communicable diseases. Emphasis is placed on the pathogens that are likely to be used in a bioterrorism attack and new or re-emerging infectious diseases. (Offered twice each year.)

**BSDP.573 Disaster Planning for Infectious Disease Disasters (3)**

This course provides an overview of strategies for and challenges to planning for infectious disease disasters, such as bioterrorism and pandemics. Unique challenges to infectious disease disasters will be addressed, including isolation, quarantine, and pharmacological interventions. Content includes tools and resources needed to develop and/or evaluate a facility or community all-hazards response plan and create exercises to test this plan. (Offered annually.)

**BSDP.574 Epidemics and Other Disasters (3)**

This course is a survey of the potential impact of disasters on contemporary society, with emphasis placed on emerging, highly communicable, essentially untreatable diseases. Content includes the medical, social, economic, and political consequences of historically significant epidemics and the complexities of managing and recovering from a highly lethal pandemic. This course will review past epidemics and pandemics, such as the Black Plague of the Middle Ages, the effects of the 15th Century introduction of smallpox in the Americas, the 1918-19 influenza pandemics, Hoof and Mouth disease in Great Britain, hantavirus, and SARS. Chernobyl, Bhopal, and Hurricane Katrina will also be studied. Students are expected to apply historical data to contemporary epidemic simulation and planning efforts. (Offered annually.)

**BSDP.575 Epidemiological Methods and Infectious Disease Surveillance (3)**

Prerequisite: EOH.572. Through audio lectures and readings, this course will present the student with the descriptive and analytic tools of epidemiology and surveillance. The student will analyze a data set using the epidemiological software package Epi Info. Students will participate in weekly internet discussions and analysis of problem sets. (Offered twice each year.)

**BSDP.576 Disaster Communications and Media Relations (3)**

This course will provide an overview of crisis communication challenges associated with disasters, including basic human communications and communication needs, the impact of stressors in communications, risk communications to communities and to crisis responders, command and control, publicly accepted crisis communication techniques, and the technologies related to crisis communications. Students will learn the theoretical foundations of risk communication, how to apply those principles during a public health crisis, and how to formulate and institute appropriate communications plans for a variety of audiences and disaster response organizations. (Offered twice each year.)

**BSDP.577 Biosecurity and Risk Assessment (3)**

Students will, through directed readings, guided discussions and participation in risk assessment exercises, gain the ability to participate in the risk assessment process to enhance the health, safety and environmental security of their community, its critical infrastructures and commercial and residential buildings. Using the rubric of risk analysis, the course engages its participants to consider the risk that state sponsored, postmodern jihadist or domestic terrorists may obtain and use biological, chemical or radio-nuclear weapons against vulnerable civilian populations. Course participants will gain an understanding of the process of developing actionable intelligence that can be used by the public health, medical and public safety communities to reduce risk and enhance the biosecurity planning, response, mitigation, and recovery process. (Not currently offered.)

**BSDP.578 Behavioral and Cultural Aspects of Disaster Response (3)**

This course examines the behavioral and cultural aspects that influence response to terrorism and other disasters. Students will study a range of responses to catastrophic events. Cultural and psychosocial sources of resilience to terrorism will be reviewed. (Offered twice each year.)

**BSDP.579 Fundamentals of Management During an Emergency (3)**

This course will introduce the learner to a basic understanding of disaster management for disasters resulting either naturally or terrorist initiated. This course is designed to provide the learner with information on the background, components, and systems involved in the management of disasters and other emergencies. Current practices, strategies, and important players involved in disaster management will be presented. The response to disasters involves politics and public leaders. The course will examine how leaders deal with the strategic challenges they face, the political risks and opportunities they encounter, the errors they make, the pitfalls they need to avoid, and the paths away from crisis they may pursue. The course will also examine what crisis leadership is and why effective crisis leadership requires organizations that are effective and the organizations require effective leaders. (Not currently offered.)

**BSDP.582 Disaster Management & Risk Analysis (3)**

This course will give the student an overview of the importance of biosecurity and the performance of vulnerability and risk assessments. It will also teach them the skills necessary to be a competent manager/leader during an emergency. Management case studies will be used to help students identify limits to their knowledge and to help them recognize when they need to obtain additional resources. (Offered twice each year)

**BSDP.583 Legal & Ethical Implications of Disasters (2)**

Students will examine the legal and ethical implications of disaster management. Elements of public health law and the principles of ethics will be covered. Students will apply ethical principles and public health laws to disaster planning and response scenarios through case studies and disaster simulations. (Offered twice each year.)

**BSDP.584 Advanced Topics in Infectious Diseases (3)**

Prerequisite: EOH-572 Students will be introduced to nidal epidemiology that evaluates diseases through understanding their natural characteristics. Methods of disease introduction will be covered in relation to disease protection. The students will review the manner in which diseases can become clinically apparent. In contrast to the natural diseases, the students will look at the method of deployment, potential presentation, and control of diseases produced by human engineering. (Offered annually.)

**BSDP.586 Preparing for Disaster: Resiliency and Stress Inoculation (3)**

While many private and public agencies have some sort of disaster response plan, few take into account the mental and emotional ramifications of disaster upon general and vulnerable populations. This course will investigate the use of resiliency and stress inoculation before disasters to lessen disaster impact and encourage effective and prompt recovery. (Offered annually.)

**BSDP.587 Facing the Challenge of International Bioterrorism (3)**

This course will examine bioterrorism – the hostile infliction of disease, and how National and Global governance should manage the challenges it raises. The issue will be addressed from a variety of perspectives including: political, legal, medical and public health, with a special focus on international cooperation in dealing with bioterrorism. (Offered annually.)

**BSDP.588 Emerging Infections: Epidemiology and Public Health Importance (3)**

This course will present to the student an overview of Emerging Infectious Diseases, not only in the United States, but internationally. The course will lead off with an overview of the topic, emphasizing topical issues and concerns. Selected topics in order of importance to public health will be examined, with an emphasis on the epidemiology of the infection and its public health impact, either potential or actual. (Offered annually.)

**BSDP.589. Business Continuity Management& Pandemic Planning (3)**

This course will give the student a very good understanding of Business Continuity Management and Pandemic Planning concepts. The first half of the class will lay a foundation for recovery of people, places and technology in a business setting. The second half will focus on the unique aspects of planning for a pandemic. (Offered annually.)

**BSDP.625 Capstone in Biosecurity and Disaster Planning (3)**

Prerequisite: All other courses must be completed before enrolling in the Practicum, unless the student has special permission from the Program Associate Director or Director. Students may enroll in the Practicum during their final semester, even if they are taking another course(s) at the same time. This course is the capstone project from the Biosecurity and Disaster Preparedness programs. Students will demonstrate the skills of interdisciplinary planning and consequence management needed to respond to a bioterrorist event or naturally occurring epidemic. Students will develop an exercise using an infectious disease scenario. (Offered every semester.)

**BST.500 Principles of Biostatistics (3)**

This course is designed as an introduction to statistical analysis for students in public health, health administration and research. It is for persons interested in learning the fundamental concepts and techniques of descriptive and inferential statistics with particular emphasis on application in health care administration, business, marketing, and epidemiology. Basic statistics, including probability, descriptive statistics, inference for means and proportions and regression methods are presented. (Offered in the fall and spring with one on-line section.)

**BST.501 Biostatistical Methods (3)**

This course introduces the basic principles and methods of biostatistics, sampling, and study design. Emphasis is on fundamental concepts and techniques of descriptive and inferential statistics with applications in basic science and clinical research, public health, and epidemiology. The core content includes sampling theory; research design; basic statistics including probability, descriptive statistics, inferences for means and proportions; and regression methods. Multivariable methods are introduced. The analytic methods and applications will be linked to topics developed in advanced coursework and epidemiology and biostatistics. (Not currently offered.)

**BST.502 Theory of Biostatistics (3)**

Prerequisite: BST.500 or 501 & calculus, or permission of Instructor. This course introduces the principles of probability and biostatistical inferences. Topics covered: role of statistics in scientific research, discrete random variables, continuous random variables, expectation and variance, moments and moment-generating functions, marginal and conditional probability, independence, functions of random variables, sampling distribution, the central limit theorem, methods of statistical estimation, hypothesis testing and confidence interval, and likelihood ratio test. (Offered annually.)

**BST.503 Statistical Programming and Study Planning: SAS (3)**

Prerequisite: BST.500, or permission of Instructor. This course teaches statistical programming for statistical analysis using SAS software. Programming topics may include: working in the Windows environment, syntax development, creating data sets, reading and manipulating external data files, transforming data, formatting variables, statistical analysis and graphical display. (Offered annually.)

**BST.510 Introduction to General Linear Modeling (3)**

Prerequisite: BST.500 or 501 or, permission of Instructor. This course is intended for graduate students in epidemiology, biostatistics, psychology, clinical health sciences, and health services research who seek skills in reading scholarly research, designing studies, and conducting statistical

analyses. Emphasis is on research design, statistical modeling and analysis methods relevant to epidemiological and clinical research, as well as applied research in behavioral, social, and health sciences. A general linear models approach is taken to data analysis strategies using linear, logistic, and regression, as well as ANOVA methods for repeated measures. Basic statistics is required. Calculus and matrix algebra familiarity are helpful. The analytic methods and applications will be linked to topics developed in the Epidemiology and Biostatistics curricula. (Offered annually.)

### **BST.512 Applied Multivariable Statistical Methods (3)**

Prerequisite: BST.500 or 501 or, permission of Instructor. This course is a second-level statistics course intended for graduate students in public health, health sciences, and health services research who plan to engage in applied research. A general linear models approach is taken to the presentation of linear regression and other multivariable methods. Topics include regression analysis, analysis of variance, discriminant analysis, categorical data analysis, logistic regression, and survival analysis. (Not currently offered.)

### **BST.520 Survival Data Analysis (3)**

Prerequisite: BST.500 or 501 or, permission of Instructor. This course treats statistical methods for analyzing survival data derived from laboratory, clinical, and epidemiological studies of humans. Both parametric and nonparametric approaches are presented. Focus will be in the practical applications of these methods to clinical and epidemiological research. The SAS and SPSS statistical packages will be used for data management and analysis. (Offered annually.)

### **BST.521 Categorical Data Analysis (3)**

Prerequisite: BST.510 or BST.511 (or concurrent), or permission of Instructor. This course introduces the theory and application of methods for categorical data, with emphasis on biomedical and social science applications. The course will cover the following topics: analysis of two-way, three-way, and higher dimension contingency tables using log-linear model, measures and tests of association for nominal and ordinal tables, logistic regression, weighted least squares, generalized linear models, and the use of computer software analyzing categorical data. (Offered annually.)

### **BST.522 Multilevel and Longitudinal Data Analysis (3)**

Prerequisites: BST.500, BST.510, or 511. This course is an advanced statistics seminar intended for graduate students in public health, health or social sciences. This course covers hierarchical linear modeling techniques that are used to build and test multilevel and longitudinal statistical models. This course will be of interest to anybody who wants to know how to analyze contextual, ecological, and longitudinal data. The course will review both the conceptual issues and methodological issues in using hierarchical linear modeling by working with several real public health and social science data sets. Topics include: fitting and testing two-level and threelevel models; evaluating model fit; generalizing multilevel models to binary and other special data; building simple longitudinal models; advanced error covariance structures. (Offered annually.)

### **BST.530 Exploratory Data Analysis (3)**

Prerequisite: BST.C510 or BST.C511, or permission of Instructor. This seminar provides an in-depth treatment of the statistical techniques known as exploratory data analysis (EDA). Topics include data reexpression, data smoothing, box and stem-and-leaf plots, resistant summary statistics and the visual display of quantitative information. Students will learn to use EDA tools to enrich their descriptive statistical analyses as well as to improve the quality of their inferential statistical analysis. Specialized EDA software (e.g., IMP) will be used throughout the course. (Not currently offered.)

### **BST.531 Social Network Analysis (3)**

Prerequisite: BST.510 or BST.511, or permission of Instructor. This course provides an advanced seminar covering social network analysis, with an emphasis on using network analysis software to model social and health science network data. Topics include background and history of network analysis; network data collection and management; network graphics; network measures of centrality, cohesion, and structural equivalence; multiplex and longitudinal network analysis. (Not currently offered.)

### **BST.540 Applied Data Management (3)**

Prerequisite: BST.500, or permission of Instructor. This course is an advanced course on data management for students in public health, health administration and health services research. Students will learn advanced concepts and techniques of research data management with particular

emphasis on applications in public health. Students will learn to use SAS statistical software. (Offered annually.)

### **BST.594 Internship in Biostatistical Consulting (0)**

Prerequisite: Permission of Internship Coordinator. This course provides supervised experience in research and biostatistical consulting projects. (Not currently offered. All MPH students take CMH.594.)

### **BST.597 Research Topics in Biostatistics (1-3)**

Prerequisite: Permission of Instructor. This course provides direct research experience in biostatistics. Content is developed jointly between the student(s) and a faculty mentor.

### **BST.598 Graduate Reading Course in Biostatistics (1-3)**

Prerequisite: Permission of Instructor. This course provides specialized study in biostatistics to enhance skills in literature review and problem solving. Content is developed jointly between the student(s) and a faculty mentor.

### **CMH.501 Foundations of Public Health Practice (3)**

This course provides a survey of local, state, and national administrative and organizational patterns of public and voluntary community health agencies, with emphasis on their history and philosophy, legal bases, and behavior. Management and policy issues and trends in Foundations of Public Health Practice are reviewed and discussed. Foundations of Public Health Practice issues are related to the overall U.S. health care system. (Offered each semester with one on-line section.)

### **CMH.502 Ethical Issues in Public Health (3)**

Prerequisite: HMP.500 or CMH.501, or permission of Instructor. Through readings, lectures, discussions, and case studies, students develop: (1) knowledge of the basic ethical concepts operative in medical and public health ethics; (2) understanding of current ethical challenges facing those engaged in health promotion, disease prevention, and epidemiologic research; and (3) the ability to articulate ethical challenges and to make critical and informed ethical decisions. (Offered twice each year.)

### **CMH.511 Managerial Aspects of Public Health Practice (3)**

Prerequisite: CMH.501. This course presents concepts and methods of management tools useful for directing a public health agency. Topics concerning organizational design, finance and budgeting, human resources management, public relations, quality improvement, and planning are presented with examples primarily focused on state and local public health practice. (Offered annually.)

### **CMH.543 Understanding Health Disparities (3)**

Prerequisite: Permission of Instructor. A seminar format will be used to examine health disparities in ethnic and racial minorities, emphasizing disparities in chronic diseases affecting African American communities. The course will explore the political, social, and economic determinants of disparities in health status, health behavior, and access to and use of health care. (Not currently offered.)

### **CMH.544 Eliminating Health Disparities (3)**

Prerequisite: Permission of Instructor. This course will examine community-based solutions for eliminating health disparities. Emphasis will be placed on examining the policy implications and evaluation of strategies and programs. Additionally, mechanisms for increasing cultural sensitivity and creating cultural competence among public health workers will be explored. (Offered annually.)

### **CMH.545 Working with Culturally Diverse Populations (3)**

This course will provide students with skills to work effectively with culturally diverse populations. In addition to exploring historical and social events that have resulted in prejudice against certain groups, this course will allow students the opportunity to explore their own beliefs and how they impact their work. (Not currently offered.)

### **CMH.551 Grant Writing (3)**

Prerequisite: HMP.500 or CMH.501, or permission of Instructor. This course will provide information and hands-on experience on the content and process for preparing competitive grant proposals. Lectures and discussions will examine major funding sources and their interests, core components of grant

proposals, the process for preparing proposals, strategies used by reviewers to evaluate grant proposals, and techniques for writing concisely. (Not currently offered.)

#### **CMH.560 GIS and Public Health (3)**

Prerequisite: EPI.500, EOH.500, BST.500. This is an introductory course in Geographic Information Systems (GIS) and its application in the Public Health arena, exploring portions of the information and communications systems used by these organizations in collecting and disseminating accurate data for the decision-makers and the public. It will delve into the basic structure of geographic information systems (GIS), define GIS as a technology - a computer-based system for integrating and analyzing geographic data - and explore the concept that geographic patterns are inherent in data and relationships between features. (Not currently offered.)

#### **CMH.592 Community Health Rounds: Integrating Public Health Practice (0)**

The purposes of this course are twofold. First year students learn the various roles of public health practitioners and how each of the public health disciplines work together to solve public health programs. For second year students, content will focus on the development of professional skills and knowledge necessary for successful careers, and to support students prior to and during their internship experiences. (Offered twice each year.)

#### **CMH.594 Practice Experience in Community Health (0)**

Prerequisite: Permission of Internship Coordinator. This course provides supervised experience in application of community health techniques through work in a public health agency or other health care organization.

#### **CMH.595 Special Study for Examinations (0)**

Prerequisite: Permission of academic advisor. Registration is required for Master of Public Health students during the semester of their oral comprehensive examinations.

#### **CMH.596 Research Project (0)**

MSPH Students only. This course is an independent directed research project that culminates the Master of Science in Public Health. Under the guidance of the academic advisor and other qualified mentor(s), each student designs and implements a research project commensurate with their professional training and interests, using the skills developed in the MSPH curriculum.

#### **CMH.597 Research Topics (1-3)**

Prerequisite: Permission of Instructor. This course provides direct research experience in community health. Content is developed jointly between the student(s) and a faculty mentor.

#### **CMH.598 Graduate Reading Course (1-3)**

Prerequisite: Permission of Instructor. This course provides specialized study in community health to enhance skills in literature review and problem solving. Content is developed jointly between the student(s) and a faculty mentor.

#### **CMH.625 Capstone in Public Health Practice (3)**

Prerequisite CMH-501, CMH-511, CMH-512, BSH-500, BST-500, EPI-500, EOH-500. This culminating course requires students to apply the knowledge and skills they have acquired across the MPH curriculum to a situation approximating some aspect of professional practice. Students will prepare a major paper focused on a program, service, or policy related to a significant public health problem or issue.

#### **CMH.5CR.90 Master's Degree Study (0)**

#### **EOH.500 Environmental and Occupational Health (3)**

This course addresses the interaction of the physical, psychological, and social environments of individuals in which they work and live. It presents a broad survey of the major environmental issues facing contemporary society in first and third world countries. The course combines an overall ecological concern with specific elements related to personal and community health, emphasizing the interrelatedness of the two and conveying an awareness of how current environmental issues directly affect our lives. (Offered each semester with one on-line section.)

#### **EOH.510 Human Toxicology and Environmental Health (3)**

Toxicology is the basic science of poison and its adverse effects on living organisms. These deleterious effects on man are the focus of this course. The fundamental information that make up the core of toxicology will be introduced. The course will be divided into five basic areas: (1) basic principles, (2) effects on the organ system, (3) review of general categories of toxic agents, (4) basic environmental toxins, and (5) the general application of toxicology. (Offered annually.)

#### **EOH.511 Environmental Toxicology (3)**

Prerequisite: EOH.510 or permission of Instructor. This course deals with the deleterious effects of toxins in the environment and workplace. The toxic effects on humans of metals, solvents, pesticides and food additives will be presented and discussed in terms of their route of exposure. Basic methods of risk assessment will be introduced along with issues in regulatory toxicology. (Offered annually.)

#### **EOH.520 Evaluation of Environmental Hazards (3)**

Prerequisite: EOH.500 or permission of Instructor. This course presents the study of chemical, physical, and biologic agents, and ergonomic factors related to environmental and occupational exposures. Methodologies used for their recognition and evaluation relative to potential health effects and the etiology of related illness and disease are discussed. Federal and State regulatory requirements of the Environmental Protection Agency, the Occupational Safety and Health Agency, other relevant federal and state agencies and consensus organization will be addressed. (Offered annually.)

#### **EOH.521 Control of Chemical and Physical Hazards (3)**

Prerequisite: EOH.520 or permission of Instructor. This course is an in-depth study of management and control methodologies used for abatement of gases, vapors, aerosols, noise and vibration. Other components of the course may include control methodology for radiation and solid and hazardous wastes as time permits. Following the course in evaluation of Environmental Hazards, this course assumes the student has some basic knowledge of the recognition of hazards and hazard assessment. Engineering and industrial hygiene concepts will be applied to typical problems in workplaces and communities. Case studies of two small manufacturing plants will be used throughout the course to integrate theory of controls with practical application. The controls will be discussed as part of a decision making process used in risk management. (Not currently offered.)

#### **EOH.522 Occupational Safety (3)**

Prerequisite: EOH.500 or permission of Instructor. This course provides an overview of the managerial, behavioral, and engineering-technical aspects of occupational safety. Historical perspectives, regulatory compliance and industry best practices are discussed. The course also addresses current trends in worker compliance and participation as well as the technical aspects of an array of applicable regulatory standards. Specific technical aspects are explored in greater depths in support of the research paper/presentation and directed study components of the course. (Offered annually.)

#### **EOH.529 Environmental and Occupational Laboratory (3)**

Prerequisite: EOH.500 or permission of Instructor. This course emphasizes the use and application of sampling and analytical methodologies for environmental and occupational exposure measurement, and toxicity testing of chemical and physical agents in the environment. This is a quantitative, hands on, instrumentation and laboratory based course. Field use application is introduced. (Offered annually.)

#### **EOH.530 Control of Infectious and Biological Hazards (3)**

Prerequisite: EOH.500 or permission of Instructor. This course addresses the nature of biological agents including the sources, pathways, routes of entry, and health effects of infectious and allergenic agents that are found in either workplaces or the general environment. Through in-depth field exercise, lectures, and in case studies, students will learn how to identify, measure, and control biological agents that are present in a variety of settings. Basic concepts from aerosol science, industrial hygiene, microbiology, infectious disease epidemiology, sanitation, behavioral science, and environmental engineering are applied to problems of infectious or allergic disease prevention and control. (Offered annually.)

#### **EOH.540 Human Health Risk Analysis (3)**

Prerequisite: EOH.500 and BST.500 or 501, or permission of Instructor. This course introduces the concepts of qualitative and quantitative methods of risk assessment. Class discussions, reading assignments, lectures and case studies



are used to introduce and develop knowledge of information sources pertaining to assumptions, uncertainties, end-product determinations, and interpretations associated with the various components of the risk-assessment process. Students will apply quantitative risk analysis methods on real-life cases. (Offered annually.)

#### **EOH.541 Environmental Risk Communication (3)**

Prerequisite: EOH.500 or permission of Instructor. This course introduces the student to risk messages and how different audiences perceive them. Basic concepts and applications of risk communication will be presented and discussed in class. Emphasis will be placed on learning to apply risk communication techniques to typical problems faced by environmental and occupational health practitioners. The class will learn the problems of communicating to diverse groups both in the U.S. and abroad through role playing exercises and development of a risk message. (Not currently offered.)

#### **EOH.550 Environmental and Occupational Epidemiology (3)**

Prerequisite: EOH.500 and EPL.C500 or 501, or permission of Instructor. This course presents the epidemiological methods used to investigate the health effects of occupational and environmental exposures to toxins. Epidemiological evidence concerning the health effects of selected occupational and environmental exposures will be critically reviewed and evaluated. (Not currently offered.)

#### **EOH.560 Policy, Science and Decisions in Environmental Health (3)**

Prerequisites: EOH.500 or permission of Instructor. The purpose of this course is to provide students with analytical tools they can use to think critically about environmental policymaking. The focus of the course is on the interface between the fields of environmental, public health, and policy sciences. Therefore, special attention is paid to policy decisions that affect environmental protection and public health. The course examines the current approaches to environmental regulation such as command and control, comparative risk assessment, and market-based incentives. It also discusses environmental justice issues, sustainable development, and policies concerning particular environmental problems in the United States and the international community. (Offered annually.)

#### **EOH.594 Internship in Environmental and Occupational Health (0)**

This course provides supervised experience in application of environmental health techniques through work in a public health agency or health care organization, or other appropriate environment. (Not currently offered. All MPH students take CMH.594.)

#### **EOH.597 Research Topics in Environmental and Occupational Health (1-3)**

Prerequisite: Permission of Instructor. This course provides direct research experience in environmental health. Content is developed jointly between the student(s) and a faculty mentor.

#### **EOH.598 Graduate Reading Course in Environmental and Occupational Health (1-3)**

Prerequisite: Permission of Instructor. This course provides specialized study in environmental health to enhance skills in literature review and problem solving. Content is developed jointly between the student(s) and a faculty mentor.

#### **EOH.625 Capstone in Environmental and Occupational Health (3)**

Prerequisites: Prerequisite: BSHE concentrator or permission of Instructor. This course brings together the didactic, theoretical and applied fundamental principles and methodologies of environmental health. The student will critically review case studies from journal articles and present reviews in class both orally and in writing. The student will also prepare an expert witness affidavit and defend it in a mock court trial. (Offered annually.)

#### **EPL.500 Principles of Epidemiology (3)**

This course is an introduction to epidemiology, which is the study of the distribution and determinants of disease in human populations and the application to the control of health problems. Topics will include analytic reasoning in public health and disease surveillance, descriptive and analytic study designs, and causal inference. Basic statistical measures used in the analysis of epidemiologic studies, including measures of disease frequency

and measures of association, will be covered. (Offered fall and spring with one on-line section.)

#### **EPL.501 Epidemiology Methods I (3)**

Prerequisites: BST.500 (or the equivalent, completed or concurrent), or permission of Instructor. This course, in conjunction with EPL.502 (Epidemiology Methods II), is offered to graduate students who desire more intensive training in epidemiologic research methods than offered in the EPL.500 (Principles of Epidemiology) course. (Not currently offered.)

#### **EPL.502 Epidemiology Methods II (3)**

Prerequisites: EPL.501 (completed with a B- or better grade). This course, in conjunction with EPL.501 (Epidemiology Methods I), is offered to graduate students who desire more intensive training in epidemiologic research methods than offered in the EPL.500 (Principles of Epidemiology) course. This course covers observational study designs, infectious disease outbreak analysis, sampling methods, statistical power, multivariate analysis, types of bias, and causal inference. (Offered annually.)

#### **EPL.511 Infectious Disease Epidemiology (3)**

Prerequisite: EPL.500, or permission of Instructor. The history of epidemiology and infectious diseases are intricately intertwined. Our understanding of Infectious Diseases requires an integration of phenomenal advances including newly recognized pathogens, explosion of diagnostic technology, hosts with unprecedented compromised states, a better understanding of dynamic demographic and sociocultural forces, and improvements in study design, analysis, and modeling. (Offered annually.)

#### **EPL.512 Chronic Disease Epidemiology (3)**

Prerequisite: EPL.500, or permission of Instructor. This course considers some of the major substantive issues and methods used in chronic disease epidemiology. Emphasis will be on the application of epidemiologic principles and methods related to cancer, cardiovascular diseases, psychiatric illness, and other chronic diseases. Topics include classification of diseases, rates, associations, etiology, prevention, and control. (Offered annually.)

#### **EPL.522 Maternal and Child Health Epidemiology (3)**

Prerequisite: EPL.500, or permission of Instructor. This course explores epidemiologic methods/research related to maternal and child health. Emphasis is placed on research which potentially challenges current public health policy. The course includes analysis of infant mortality, prenatal and childhood elevated lead levels, perinatal substance abuse, prenatal and childhood HIV infection and childhood asthma mortality. Policy implications are discussed. (Offered annually.)

#### **EPL.523 Applied Epidemiology (3)**

Prerequisite: EPL.500, or permission of Instructor. This course provides students with an understanding of the applications of epidemiology in public health and health care settings. It includes a brief review of key epidemiologic concepts; examples of the use of epidemiologic data in public health planning, health services decision-making and policy making; and case studies of current issues in epidemiology. Individual student projects involve data collection, analysis, and/or dissemination. (Not currently offered annually.)

#### **EPL.524 Disability Epidemiology (3)**

Prerequisites: BST.500 and EPL.500; EPL.601 is recommended; or permission of Instructor. The emphasis in this course is on the interplay of epidemiology and disability in America. The course is divided into five primary modules: 1) concepts and classification; 2) injury; 3) maternal and child health issues; 4) aging, and 5) applying outcomes research. (Not currently offered.)

#### **EPL.525 Social Epidemiology (3)**

Prerequisite: EPL.500, or permission of Instructor. This course will provide a survey of the social determinants of health (e.g. socioeconomic status, race/ethnicity, social capital and neighborhood influences) with emphasis on methods and issues of measurement of social factors, and advanced methodologies in social epidemiology (e.g. community-based participatory research, GIS and spatial mapping, multi-level modeling). (Offered annually.)

#### **EPL.591 Colloquium in Epidemiology (0)** (Not currently offered.)

#### **EPL.594 Internship in Epidemiology (0)**

Prerequisite: Permission of Internship Coordinator. This course provides supervised experience in application of epidemiology techniques through

work in a public health agency or other health care organization. (Not currently offered. All MPH students take CMH.594.)

#### **EPL.597 Research Topics in Epidemiology (1-3)**

Prerequisite: Permission of Instructor. This course provides direct research experience in epidemiology. Content is developed jointly between the student(s) and a faculty mentor.

#### **EPL.598 Graduate Reading Course in Epidemiology (1-3)**

Prerequisite: Permission of Instructor. This course provides specialized study in epidemiology to enhance skills in literature review and problem solving. Content is developed jointly between the student(s) and a faculty mentor.

#### **EPL.625 Capstone in Epidemiology (3)**

Prerequisites: EPL.500-502 and BST.511 or permission of Instructor. The purposes of this course are 1) to develop the practical statistical skills to analyze an epidemiologic data set, and 2) to learn to write a scientific paper in the form of a journal article from the results of epidemiologic data analysis. Stratified analysis and modeling using main effects logistic regression will be emphasized. (Offered annually.)

## **PUBLIC HEALTH STUDIES**

**Elizabeth Baker, Ph.D., MPH**

**Thomas E. Burroughs, Ph.D.**

*Graduate Program Co-Directors*

Due to increased market demand for highly trained public health professionals, the School of Public Health offers a comprehensive doctoral program. The doctoral program allows students to study and work side-by-side with nationally known educators and researchers who serve as mentors. Recent graduates have taken positions as faculty members, with federal agencies, and within the private health care sector.

The Doctoral Program in Public Health Studies at Saint Louis University School of Public Health allows you to choose from several different public health majors: Behavioral Science and Health Education; Biosecurity and Disaster Preparedness; Biostatistics: Environmental and Occupational Health; Epidemiology; Health Policy, and Health Services Research.

### **Program Objectives**

The objectives for the doctoral studies program in the SPH are:

- To select, prepare and graduate individuals for public health research, education and practice in academic, private and public research, and consulting organizations.
- To provide students with expert skills in research design, methods and dissemination, a solid understanding of public health science, including the distribution and determinants of health and disease across populations, and expertise in one of the following fields of study: behavioral science, biosecurity and disaster preparedness,

biostatistics, environmental and occupational health, epidemiology, health management and policy (management and policy tracks), and health services research.

- To train future public health researchers in an apprenticeship model, in which students are matched on admission with mentor(s) in their chosen fields of study who have an active research agenda.

### **Learning Objectives**

There are two sets of learning objectives for doctoral studies in the SPH.

- The first set focuses on the “core” knowledge, skills and abilities that are expected of all individuals receiving the PhD degree. This set of knowledge, skills and abilities includes both the multidisciplinary, scientific fields that inform public health research and the research design, methods and dissemination techniques that facilitate scholarly contribution to one of these public health fields of study.
- The second set of learning objectives is concentration-specific. Each doctoral student is expected to demonstrate in-depth knowledge and expert skills and abilities in their chosen concentration. These concentrations include behavioral science, biosecurity and disaster preparedness, biostatistics, environmental and occupational health, epidemiology, health management and policy (management and policy tracks), and health services research.

The specific knowledge and skills provided within the doctoral program are based on a set of core and concentration specific competencies. These competencies reflect the expectations of accrediting bodies as well as the faculty. There are three components to the doctoral studies curriculum.

- The first is the core doctoral curriculum, shared across all concentrations, comprised of a total of 12 credit hours. These are divided between four shared courses. In addition, there is a required professional development course required that provides students with the opportunity to build their unique professional skills outside of formal coursework or research with their mentor (e.g., obtaining a teaching certificate or learning a new methodology). These courses are required of all students.
- The second is the concentration curriculum, comprised of courses totaling 48 credit hours. Within the concentration some of these credits may be for specific required courses and some may be for courses that are tailored for each student to provide them with the knowledge and skills needed to achieve their research and professional goals. The Doctoral Program Committee will be consulted on curricula decisions for student careers, and will provide guidance and direction to the Director(s).
- The third component consists of the dissertation, including 12 dissertation credit hours.

Each student must complete the program within 7 years of initial matriculation or submit a formal request to extend their

studies. Students will enroll in 12 dissertation credit hours prior to completion of their degree. For students who need additional time for completion they must maintain their student status by enrolling for zero credit hours in Dissertation Research until they have completed and defended their dissertation.

## The Doctoral Concentrations

Each concentration defines an educational experience reflecting the faculty assessment of the intellectual and professional requirements for Ph.D. trained students. The prescribed and elected coursework and the student's participation in mentored research comprise the essential doctoral training content. The student aims to complete a dissertation project commensurate with student goals and division resources. A characterization of each concentration follows:

### BEHAVIORAL SCIENCE AND HEALTH EDUCATION

This program of study prepares professionals to apply behavioral science principles to the development and evaluation of programs, policies, and environmental changes that promote public health. Students learn to conduct independent research and design and evaluate community-based interventions at individual, organizational, community or societal levels.

### BIOSECURITY AND DISASTER PREPAREDNESS

This program provides the knowledge and skills required for biosecurity professionals, such as emergency management, homeland security, epidemiology, communicable disease management and disaster/pandemic planning. The program includes on-line courses, but requires 2-3 years of residency at Saint Louis University.

### BIostatISTICS

This program of study prepares students to be experts in research design, analytic statistical methods, computation/statistical programming and data management administration. Graduates are able to conduct or manage biostatistical operations related to planning, analysis and evaluation of research in public health, health services, epidemiology and medical care. Training encourages application of knowledge in practical settings.

### ENVIRONMENTAL AND OCCUPATIONAL HEALTH

The PhD in environmental and occupational health requires that students master laboratory techniques, understand the etiology of occupational and environmental disease, conduct exposure assessment, analyze policy, and design and build control techniques for biological, chemical, or physical hazards. Students are prepared to become independent investigators working in academia, government, business, consulting, or in non-governmental agencies.

### EPIDEMIOLOGY

This program of study advances a student's understanding of the distribution and determinants of health and disease in human populations. It is designed to produce academicians

and well-trained practitioners of epidemiology, who are highly qualified as independent investigators and teachers.

### HEALTH MANAGEMENT AND POLICY

This program of study focuses on the policy and politics, financing, organization, delivery and associated outcomes of health services. Drawing upon the disciplines of economics, finance, management science, political science and sociology, faculty and students are able to address societal, system and organizational health care issues in a comprehensive and systematic way. The program's research agenda is active and diverse, with particular interest on projects involving underserved communities.

### HEALTH SERVICES RESEARCH

This multidisciplinary program examines the interplay between multiple aspects of health care, including clinical care, access, utilization, organization, financing, cost and outcomes. The program prepares students to conduct basic and applied research that reveals a deeper understanding of the results of health care services - clinical, personal, economic and societal. Health services research is a high-demand field that offers numerous opportunities across corporate, government non-profit and academic settings, especially in the current era of health care system reform.

## Core Doctoral Seminar Course Descriptions

### PHS 601: Design and Analysis in Public Health

This seminar is to be taken during the first three semesters of the doctoral student's enrollment. This course presents doctoral students in Public Health Sciences with methods for the analysis of public health studies as well as detailed discussion of topics related to the design of such studies. Emphasis on manuscript preparation and grant writing from the design and analysis perspectives is emphasized throughout the course using examples from a variety of settings in the field of Public Health. This course embodies professional activities integral both to completing doctoral training and the onset of the professional research career. This course will help provide additional analytic skills that will be useful throughout your research career. While the specific techniques covered in the course are in no way exhaustive, the course seeks to provide a foundation upon which future professional development can be laid upon to support a productive career in public health research.

### PHS.605 Science, Theory and Public Health (3)

This seminar is intended to provide the opportunity to discuss the foundations upon which public health and other health sciences research is conducted. The seminar focuses on four broad areas: (1) the determinants of health in public health research and varying levels of research foci/analyses; (2) the philosophy of science, history of science, scientific revolutions and paradigms, and the scientific method; (3) leadership, communication; and (4) scientific inquiry as a life's work—reflecting on several individual's personal perspectives.

### PHS.606 Applied Research Skills in Public Health Studies (3)

Prerequisite: PHS Ph.D. student or permission of Instructor. The objective of this course is to provide doctoral students with training and experience in the tasks and endeavors characteristic of practice and research careers in the field of Public Health. Topics will be taught by experts in each area through lecture, discussions and workshops. Specific areas will include: (1) designing and conducting public health research, (2) course development, teaching strategies and effective lecture, (3) scientific writing, and (4) professional presentation skills to a variety of audiences. Students will have the opportunity to develop, test and refine their skills in each area. In addition, students will 'pilot test' all remaining aspects of their doctoral training, including oral exams, dissertation proposal and the dissertation itself.

# HEALTH MANAGEMENT AND POLICY

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**Kanak Gautam, Ph.D.,**  
*Interim Department Chairperson*

The Department of Health Management and Policy offers two Master's degrees in the School of Public Health: the Master of Health Administration (MHA) and the Master of Public Health in Health Policy (MPH-HP). The Department also offers a new graduate Certificate in Community Benefit (CCB).

## Master of Health Administration

The Master of Health Administration (MHA) degree program prepares women and men to assume management positions throughout the health industry. Founded in 1947, it is one of the oldest and most well-respected programs of its kind in the country. The program is accredited by the Commission on Accreditation of Healthcare Management Education (CAHME).

The integration of theory and practice in the 2-year full-time, 60 credit-hour, competency-based curriculum allows students to develop leadership, critical thinking, analytical, management, political development and communication skills essential for success as future health care administrators. Students complete required courses offered by the School of Public Health and can take electives in any graduate program offered by the University, including the Cook School of Business, the School of Law, and other academic units. In addition, all students complete a thirteen-week internship in a health care organization.

## Executive Master of Health Administration

The Executive Master of Health Administration program is an innovative program specifically designed for working professionals looking to further advance their careers. It provides students with a strong foundation to understand the complex and evolving field of health care. The 60-credit-hour program blends a mixture of online distance-based learning technologies with periodic in-class sessions.

### Prerequisites

Possession of a baccalaureate or first professional degree. Completion of at least 3 credit hours each in microeconomics and finance with a grade of B or higher before matriculation or

enrollment in HMP.504.

### Required Courses

BST.500 Principles of Biostatistics;

HMP.500 Health Care Organization;

HMP.503 Introduction to Health Care Accounting;

HMP.511 Health Operations Management;

HMP.513 Health Information Systems;

HMP.517 Managerial Epidemiology;

HMP.518 Behavioral and Environmental Aspects of Population Health;

HMP.520 Health Care Economics;

HMP.530 Management of Health Care Organizations;

HMP.534 Health Care Marketing;

HMP.538 Management of Human Resources;

HMP.540 Legal Aspects of Health Services Management;

HMP.542 Health Care Ethics in a Pluralistic Society;

HMP.570 Health Care Financial Management;

HMP.571 Financial Aspects of Health Care; and

HMP.580 Strategic Management in Health Care Organizations

### Additional Requirements

HMP.504 Fundamentals of Economics and Finance (required of students who have not met the MHA Program's prerequisites in microeconomics and finance);

HMP.591 Health Management and Policy Rounds (both semesters in Year 1 of curriculum);

HMP.594 Health Management & Policy Internship;

HMP.595 Special Study for Exams.

Four electives (12 credit-hours) complete coursework requirements.

No formal minor is permitted.

## Master of Health Administration/Juris Doctor

The MHA/JD dual degree program consists of 127 credit hours of coursework offered by the Department of Health Management and Policy and the School of Law in which requirements for the MHA and the JD degrees are integrated. Students must fulfill all admission requirements for both the Department and the School of Law to be admitted to the dual degree program. Application for admission to the MHA degree program and to the School of Law may be made simultaneously, or students may choose to wait and apply to

the MHA program during their first year as law students.

## Master of Health Administration/Master of Business Administration

The MHA/MBA dual degree program is an intensive, 24-month full-time, 83 credit-hour cooperative venture between the Department of Health Management and Policy and the Cook School of Business in which requirements for the MHA and the MBA degrees are integrated. Students must fulfill all admission requirements for both the Department and the School of Business to be admitted to the dual degree program. Application to the individual programs should be made simultaneously.

## Master of Health Administration/Bachelor of Science in Health Information Management

The MHA/BS in Health Information Management dual degree program offers students the opportunity to complete the BS and MHA degrees in a 5-year full-time, 154 credit hour program of study (97 as an undergraduate, 57 as a graduate student). Students who have been admitted for undergraduate study at Saint Louis University and select a major in health informatics and information management may apply in their junior year of study to be admitted to the MHA program to complete the linked graduate degree. Students admitted to the dual program must have an outstanding undergraduate record and demonstrate the potential for senior leadership in the health management field.

## Master of Health Administration/Bachelor of Science in Health Management

The MHA/BS in Health Management accelerated master degree program offers students the opportunity to complete the BS and MHA degrees in a 5-year full-time, 150 credit hour program of study (90 as an undergraduate, 60 as a graduate student). Students who have been admitted for undergraduate study at Saint Louis University and select a major in health management may apply in their junior year of study to be admitted to the MHA program to complete the linked graduate degree. Students admitted to the dual program must have an outstanding undergraduate record and demonstrate the potential for senior leadership in the health management field.

## Master of Public Health in Health Policy

The Master of Public Health degree in Health Policy (MPH-HP) prepares students for roles in health policy analysis, development, and implementation as well as advocacy for public and private sector organizations.

The 51 credit-hour program consists of public health core courses in six areas (biostatistics, epidemiology, behavioral science/health education, environmental and occupational health, health administration, and health care ethics) and required and elective courses in health policy. The required 42 credit hours in health policy are completed in the School of Public Health. The nine hours of elective courses may be taken in the School of Public Health or other schools of the university offering courses related to health policy. All students also complete a 13-week internship.

### Prerequisites

Possession of a baccalaureate or first professional degree.

### Required Courses

BSH.500 Behavioral Science and Public Health;

BST.500 Principles of Biostatistics;

EOH.500 Environmental and Occupational Health;

EPI.500 Principles of Epidemiology;

HMP.500 Health Care Organization;

HMP.504 Fundamentals of Economics and Finance;

HMP.520 Health Care Economics;

HMP.521 Economic Evaluation;

HMP.530 Management of Health Care Organizations;

HMP.541 Health Policy and Law;

HMP.542 Health Care Ethics in a Pluralistic Society;

HMP.550 Health Policy;

HMP.553 Capstone Seminar in Health Policy;

HMP.572 Government Financing of Health and Health Care;

### Additional Requirements

HMP.591 Health Management and Policy Rounds (both semesters in Year 1 of curriculum);

HMP.594 Health Management & Policy Internship;

HMP.595 Special Study for Exams.

Three electives (nine credit-hours) complete the coursework requirements.

## Master of Public Health in Health Policy/Juris Doctor

The MPH-HP/JD dual degree program allows students to complete both the MPH-HP and JD degrees through a 124 credit-hour, 4-year program of study. Students must fulfill all admission requirements for both the Department of Health Management and Policy and the School of Law to be admitted to the dual degree program. Application for admission to the MPH-HP degree program and the School of Law may be made simultaneously, or students may choose to wait and apply to the MPH-HP program during their first year of study in the School of Law.

## Master of Public Health in Emergency Management and Crisis Leadership

The Master Degree of Public Health in Crisis Leadership (MPH-EMCL) is designed to meet projections for current and future demands for interdisciplinary competence in emergency management and crisis leadership across all sectors. The purpose is to encourage progressive growth and refinement of the emergency management discipline and higher education community and to the further legitimization and professionalization of the emergency management community. Ultimately, this results in the preparation of a highly educated and integrated homeland security management and leadership capacity that operates from a common knowledge, science, and theory-based framework. This includes situational and transformational leadership, analytical, theoretical and strategic thinking skills, critical thinking and decision science, systems theory, design and dynamics, hazard anticipation and identification, risk and gap assessment and analysis, risk management and adaptability, vulnerability reduction and resilience enhancement, and community continuity. This programs is designed to address this market demand. Students complete 51 credit-hours of core public health and emergency management and crisis leadership courses on campus and on-line.

### Prerequisite:

Possession of a baccalaureate degree.

### Required Courses:

BSH.500 Behavioral Science and Public Health;  
 BST.500 Principles of Biostatistics;  
 EOH.500 Environmental and Occupational Health;  
 EPI.500 Principles of Epidemiology;  
 HMP.500 Health Care Organization;  
 HMP.504 Fundamentals of Economics and Finance;  
 HMP.520 Health Care Economics;

HMP.521 Economic Evaluation;

CMH.502 Ethical Issues in Public Health;

HMP.537 Organizational Behavior and Management;

HMP.562 Crisis Leadership

HMP.XXX Interpersonal Dynamics and Crisis Leadership

HMP.XXX Critical Thinking and Crisis Leadership

HMP.XXX Crisis Leadership Capstone

### Additional Requirements

HMP.591 Health Management and Policy Rounds (both semesters in Year 1 of curriculum);

HMP.594 Health Management & Policy Internship;

HMP.595 Special Study for Exams.

Three electives (nine credit-hours) complete the coursework requirements.

## Graduate Certificate in Emergency Management and Crisis Leadership

The graduate certificate in Emergency Management and Crisis Leadership is an 18 credit hour program. It is designed for public health and health care professionals who do not choose to pursue a graduate degree in the area.

### Prerequisite:

Possession of a baccalaureate degree.

### Required Courses:

HMP.562 Crisis Leadership

HMP.XXX Interpersonal Dynamics and Crisis Leadership

HMP.XXX Critical Thinking and Crisis Leadership

Two electives (six credit-hours) complete the coursework requirements.

## Graduate Certificate in Community Benefit

The graduate certificate in Community Benefit (CCB) is an 18 credit-hour program. According to recent U.S. Internal Revenue Service guidelines, not-for-profit health care organizations must demonstrate that they are significantly benefiting the communities they serve in order to maintain their tax-exempt status. Community benefit, which impacts both not-for-profit organizations and communities alike, is a very dynamic and emerging area in health care. Saint Louis University offers the nation's first program that provides the

necessary academic background and skills required to understand this complex, evolving field.

All courses in this program are provided through asynchronous distance learning and are specifically designed for those who wish to specialize in community benefit. A certificate can be earned in three consecutive semesters. Students may enter the program at the beginning of any semester. The certificate can also be used as a first step toward graduate education in public health at Saint Louis University. Several courses will meet core requirements for students who wish to work toward an MPH or MHA.

### Prerequisites

Possession of a baccalaureate degree.

### Required Courses

HMP.DIST Orientation to Community Benefit and Distance Learning (Zero credit hour course required each semester)

HMP.543 Evidence based Public Health and Community Benefit

HMP.544 Managerial Epidemiology in Community Benefit

HMP.545 Organization of Health Services and Health Policy in Community Benefit

HMP.546 Organizational Behavior and Management for Community Benefit

HMP.547 Fundamentals of Economics and Finance in Community Benefit

HMP.548 Social Justice and Social Ethics in Community Benefit

### Additional Requirements

HMP.549 Capstone Project in Community Benefit

### Graduate Courses

#### HMP 500 Health Care Organization (3)

This course introduces students interested in the health care delivery system to contemporary issues in the organization, financing and delivery of health and medical care in the United States. This cornerstone course provides students with fundamental concepts, terminology, and factual information that are the building blocks for other courses in their program of study. It also helps students understand the views and values of patients, providers and payers. (Offered fall semester.)

#### HMP.503 Introduction to Health Care Accounting (3)

This course introduces students to the basics of financial and managerial accounting. It focuses on the accounting concepts that are most critical to management decision making within health care environments. (Offered fall semester.)

#### HMP.504 Fundamentals of Economics and Finance (3)

This course is designed to provide students with little or no prior training in economics and finance with a solid overview of key fundamental concepts, theories and analytical tools in each field of study. The large majority of the course is devoted to a study of the fundamentals of microeconomics, covering the basics of supply and demand, consumer theory, market structure and the theory of the firm. The rest of the course introduces students to three key fundamental concepts of financial management: the time value of money, financial risk and required return. Overall, the course develops students' functional literacy in the fields of economics and finance so they can be better consumers of economic and financial information today and more effective decision makers in the future. (Offered fall semester.)

#### HMP.510 Quality Improvement in Health Care Management (3)

Prerequisite: HMP.530 and HMP.538 or permission of the instructor. This course examines the historical development, current concepts and techniques and future trends related to the monitoring and evaluation of the quality of health care services. Cases will be used to present current issues. (Offered fall semester.)

#### HMP.511 Health Operations Management (3)

Prerequisite: HMP.500 and BST.500 or permission of the instructor. Course examines operational issues in health care management. Topics include systems analysis, continuous quality improvement and re-engineering, demand forecasting, facility location and design models, decision analysis techniques, linear programming, queuing and waiting models, inventory control models, Lean and Six Sigma techniques, and statistical quality control. The goal is to instill an understanding of the language, applications, and limitations of quantitative models with regard to decision-making and problem solving in health service organizations. (Offered spring semester.)

#### HMP.513 Health Information Systems (3)

Prerequisite: HMP.500, or permission of the instructor. This course is designed to develop four areas of student knowledge, skills, and competencies in Health Information Management (HIM). It provides a broad overview of the theory and application of computers in the health setting, with emphasis on the health manager's role in relation to the information function. It introduces students to computer hardware, software and operating systems through hands-on experience as they build an online survey and a simple web page. Students learn to identify the necessary resources, staff support and change management required to develop, implement, and evaluate a health information system. Finally, the course explores the potential and limits of information technology in improving community level health delivery via such resources as the Internet. (Offered fall semester.)

#### HMP.517 Managerial Epidemiology (3)

Prerequisite: HMP.500 and BST.500 or permission of the instructor. This course introduces concepts, methods, and strategies in epidemiology as they apply to health services management. The course provides basic tools used in descriptive and analytical epidemiology, both of which are crucial to making informed inquiry into the health of human populations and informed decisions regarding the distribution of health services resources. Analytic reasoning is emphasized throughout the course; however, formal statistical methods are not covered in detail. (Offered fall semester.)

#### HMP.518 Behavioral and Environmental Aspects of Population Health (3)

This course examines the conceptualization and implications of social/behavioral and environmental/occupational factors on health in populations. The course demonstrates how these factors are integrated with strategic management through practical applications. (Offered fall semester.)

#### HMP.520 Health Care Economics (3)

Prerequisite: HMP.500 and HMP.504 or permission of the Instructor. The main purpose of this course is to enable students to apply economic theory and analysis to health issues and problems, by emphasizing how markets work and why they fail in the production of health and delivery of health care services. Topics covered include an overview of the U.S. health economy; the production of health and the demand for health care; market structure; the market for health insurance, managed care, and hospital services; and the role of public policy in producing healthy populations. (Offered spring semester.)

#### HMP.521 Economic Evaluation (3)

Prerequisite: HMP.520 or permission of the instructor. Economic evaluation is the comparison of different interventions (or a proposed intervention versus the status quo) to determine which is the best use of society's scarce

resources. It includes cost-minimization, cost-benefit, cost-effectiveness, and cost-utility analysis. This course covers the theoretical basis for economic evaluation, its use in health, and the mechanics of the 4 types of analysis. (Offered spring semester.)

### **HMP.529 Multi-institutional Arrangements in Health Care (3)**

Prerequisites: HMP.500, HMP.530 and HMP.538 or permission of the instructor. Resource pressures are causing restructuring of health care organizations and change in job descriptions and career tracks. This course examines career opportunities in the health care industry arising from organizational consolidations and increased importance of certain industry segments. Consolidated organizations examined include for-profit hospital chains, physician practice management corporations, academic medicine networks, for-profit rural hospital chains, post-acute networks, ambulatory care chains and employer alliances. New industry segments examined include the medical devices industry, pharmaceutical industry, medical supplies industry, health information industry and e-commerce. The course prepares students for a variety of careers in the fast-changing health care industry. (Not currently offered.)

### **HMP.530 Management of Health Care Organizations (3)**

This course focuses on the macro-organizational concepts of managing complex health care organizations. Health care organizations are complex systems transforming inputs (professionals, supplies, etc.) into outputs (health services) for customers (patients). To perform well, these systems require appropriate environmental assessment, strategy, governance, organizational structure, work processes, distribution of power, innovation and change. These requirements for effective organizational performance form the core content of the course. (Offered fall semester.)

### **HMP.531 Medical Practice Management (3)**

Prerequisite: HMP.500, HMP.530 and HMP.538 or permission of the instructor. This course focuses on ambulatory health care delivery systems, comparing and contrasting them with other health care models. The managerial process, including financing, personnel, organizational structures, physical plant, and external relationships, will be explored. The relationship of demographic variables to the planning process for ambulatory care will be developed. (Offered spring semester.)

### **HMP.533 Long-Term Care Administration and Planning (3)**

Prerequisite: HMP.500, HMP.530 and HMP.538 or permission of the instructor. This course is designed to provide the student with a body of knowledge representative of the current state-of-the-art. Emphasis will be placed on adapting health care administration concepts to serving the long term care population with particular emphasis on continuity of care. Interdisciplinary staff coordination and the complex family-client interrelationships will be examined as facets of promoting and maintaining optimum potential quality of life for each client. (Not currently offered.)

### **HMP.534 Health Care Marketing (3)**

Prerequisite: HMP.500 or permission of the instructor. The purpose of this course is to train future health services professionals in managing and marketing health services from a strategic perspective. The course is intended to present principles, theories, methods, and tools used in developing, implementing, and managing successful marketing strategy, which creates and shapes the future. The marketing process, consumer behavior, the marketing mix, and controlling and monitoring marketing processes are examined in relationship to the unique and changing aspects of the health services industry. (Offered spring semester.)

### **HMP.535 Business Sectors in Health (3)**

Prerequisite: HMP.500 or permission of the instructor. This course introduces students to business sectors within healthcare that strategically impact cost and quality of health services. Covered sectors include suppliers (pharmaceuticals, medical-surgical supplies, medical devices, distributors, and group purchasers) financial intermediaries (HMOs, PBMs) and health care providers (hospitals, medical groups, nursing homes). Each sector is analyzed in terms of organizations, products/services, customers, and strategic business practices. (Not currently offered.)

### **HMP.538 Management of Human Resources in Health Care (3)**

This course focuses on functions and concepts required for managing human resources in organizations. It combines traditional human resource management (HRM) functions with concepts from organizational behavior. Course content includes selection, training and development, compensation, perfor-

mance appraisal, motivation, organizational development, union activity, and modes of conflict resolution. (Offered spring semester.)

### **HMP.539 Leadership in Health Care Organizations (3)**

Prerequisites: HMP.500, HMP.530 and HMP.538 or permission of the instructor. This course focuses on leadership in organizations, exploring the relationships among different approaches to leadership and different organizational contexts. The course is intended for those who aspire to leadership; those who want to make a positive difference in an organization or institution. The course provides a series of opportunities to think more deeply and systematically about leadership and to increase each student's personal capacities as a leader. (Not currently offered.)

### **HMP.540 Legal Aspects of Health Services Management (3)**

Prerequisites: HMP.500 and HMP.530 or permission of the instructor. This course is designed to familiarize students with legal issues in the health care field. It is also designed to provide students with insight into how the legal system functions, how lawyers analyze legal problems, and how health care administrators may interact with the legal system and lawyers. (Offered spring semester.)

### **HMP.541 Health Policy and Law (3)**

Prerequisite: HMP.500 and HMP.550 or permission of the instructor. This course is an overview of health law in the U.S. and its interrelationship with health policy. Topics covered include the U.S. legal system, contracts, intentional torts, medical malpractice, legal and ethical obligations to provide healthcare, privileging, medical decision-making, tax-exemption, antitrust, fraud, public health law, and constitutionally protected rights. Emphasis is placed on describing how existing laws and legal principles influence the development of new health care policies. (Offered fall semester.)

### **HMP.542 Health Care Ethics (3)**

This course introduces students to the ethical issues confronting health care leaders in today's pluralistic society and increasingly complex health system. It develops students' ability to analyze ethical problems arising in the fields of health management and policy. Students learn to assess the values of our society, which might be used to solve these problems, and to employ the methodology of ethical decision-making. (Offered fall semester.)

### **HMP.543 Evidence-Based Public Health and Community Benefit (3)**

Prerequisite: enrollment in the CCB program. This course provides students with the skills to understand the connection between evidence-based public health and its relationship to community benefit. Students master the application of assessment, program development, implementation, and evaluation from an evidence-based perspective. Students explore the role of community in the design, implementation and evaluation of evidence-based approaches for disease prevention and health promotion. (Offered spring semester.)

### **HMP.544 Managerial Epidemiology in Community Benefit (3)**

Prerequisite: enrollment in the CCB program. This course provides students with the skills to understand the connection between epidemiology and biostatistics and their relationship to community benefit. Further, the student applies concepts learned to the planning, development, and evaluation of community benefit efforts. (Offered summer semester.)

### **HMP.545 Organization of Health Services and Health Policy in Community Benefit (3)**

Prerequisite: enrollment in the CCB program. This course provides an overview and orientation of health services in the United States, various factors that influence the delivery of health services, the role of health policy, and the expanded role of hospitals and clinics within the broader public health perspective. Historical and contemporary issues are addressed. (Offered fall semester.)

### **HMP.546 Organizational Behavior and Management for Community Benefit (3)**

Prerequisite: enrollment in the CCB program. This course provides an understanding of how decision makers manage an organization to achieve strategic initiatives and the impact that these efforts have on the behavior of people within the organization. Topics include: organization effectiveness, strategic alignment, organizational structures and processes, group processes, leadership, decision making, negotiation, motivation and human resource management. (Offered summer semester.)



**HMP.547 Fundamentals of Economics and Finance in Community Benefit (3)**

Prerequisite: enrollment in the CCB program. This course is designed to provide students with little or no prior training in economics and finance with a solid overview of key fundamental concepts, theories and analytical tools in each field of study. The large majority of the course is devoted to a study of the fundamentals of microeconomics, covering the basics of supply and demand, consumer theory, market structure and the theory of the firm. The rest of the course introduces students to three key fundamental concepts of financial management – the time value of money, financial risk and required return. Overall, the course develops students' functional literacy in the fields of economics and finance so they can be better consumers of economic and financial information today and more effective decision makers as organizational leaders in the future. (Offered spring semester.)

**HMP.548 Social Justice and Social Ethics in Community Benefit (3)**

Prerequisite: enrollment in the CCB program. Many health care organizations judge their success based on their ability to care for those who lack the resources to otherwise access care. What does justice require of such an organization? This course applies traditional bioethical principles to community benefit decisions and explores the concept of human dignity as it relates to the special moral importance of health. This course also provides students with opportunities to explore how personal ethics must be coupled with social ethics. (Offered fall semester.)

**HMP.549 Capstone Project in Community Benefit (0)**

Prerequisite: enrollment in the final semester of the CCB program. This required project provides the culminating experience for the certificate program in which students synthesize all applied concepts from the courses into one comprehensive project. (Offered all semesters.)

**HMP.550 Health Policy (3)**

This course orients students to the policy process to increase their understanding of the nature of health policy making and health politics. It also provides students with the opportunity to develop an in-depth understanding of current health care policy issues. (Offered fall semester.)

**HMP.552 Legislative Health Policy and Process (3)**

Prerequisite: HMP.500 and HMP.550 or permission of instructor. This course provides a theoretical and practical understanding of the procedures and practices that define legislative health advocacy in the area of Federal health policy. The course provides students with an understanding of the legislative procedures and process, and the skills needed to address public health policy issues at the federal level. Students will examine aspects of planning, strategic thinking and political endeavors necessary to develop and implement legislative policy. (Not currently offered.)

**HMP.553 Capstone Seminar in Health Policy (3)**

Prerequisite: Eligible students are within 15 semester-hours of completion of credits required for the MPH in Health Policy degree. As a capstone or culminating experience, the seminar integrates learning from all aspects of the curriculum through application of knowledge in individual and group exercises. The course also considers issues of current significance for health policy in the United States and internationally. (Offered spring semester.)

**HMP.560 Disaster Preparedness (3)**

This introductory interdisciplinary practicum on disaster preparedness planning and management builds on recent US human and natural disaster experience. The course is designed to introduce public health, social work, nursing, public administration, business and other students to the organization, roles and evaluation of disaster preparedness. The course covers the history of disaster preparedness pre-911, changes that have occurred afterwards, and experience with Hurricane Katrina and further change in disaster preparedness that is under consideration. (Offered annually.)

**HMP.562 Crisis Leadership (3)**

Today's organizations, communities, and social systems are faced with unprecedented, increasingly complex, and more devastating and recurrent crisis events. This course provides students with an overview of crisis leadership and emergency management, the continuum between traditional and crisis leadership, and a framework for a systemic approach to related theory, models and methods.

**HMP.570 Health Care Financial Management (3)**

Prerequisites: HMP.500 and HMP.504 or permission of the instructor. Corporate finance techniques for financial decision-making are applied to health care organizations using "real world" case studies. In addition to basic finance concepts, topics include capital acquisition, cost of capital, capital investment decisions, tools of risk analysis, and financial and operating analysis. Both for-profit and not-for-profit health care organizations are studied. The course employs extensive use of Excel. (Offered spring semester.)

**HMP.571 Financial Aspects of Health Care (3)**

Prerequisites: HMP.530 and HMP.570 or permission of the instructor. Managed health care integrates health insurance functions with delivery of medical care. This course introduces students to financial issues faced by health care managers in a managed care environment. Topics include fundamentals of insurance, capitation rate development, risk analysis in managed care systems, cost accounting and management, and Medicare and Medicaid managed care. The course employs case analysis and team projects with local health-related organizations. (Offered fall semester.)

**HMP.572 Government Financing of Health and Health Care (3)**

Prerequisite: HMP.500 or permission of the instructor. This course introduces the economic theory of public goods and relates it to the role of government in providing for the maintenance and improvement of community health. The efficiency and effectiveness of current government financing strategies are analyzed. Topics include the theories of public goods and public choice, public budgeting processes, cost-benefit/cost effectiveness analysis of public investment, structure of Medicare, Medicaid and public health funding, and the economic effects of public financing of health-related services. (Offered spring semester.)

**HMP.573 Security, Privacy, and HIPAA (3)**

Prerequisite: HMP 513 or permission of the instructor. Medical professionals need to update their understanding of how to protect patient privacy due to the migration of paper-based medical records to electronic form. This elective explores security, privacy and HIPAA regulations/compliance within the health care industry, combining theory, best industry practices, case studies, and hands-on labs. (Offered annually.)

**HMP.580 Strategic Management in Healthcare Organizations (3)**

Prerequisite: Completion of all required courses in the first three semesters of full-time study for the MHA degree or permission of the instructor. The purpose of this capstone course is to assist the student in integrating the knowledge and skills developed during the course of study in the MHA program in the context of strategic thinking and strategic management of health care organizations. Integration is supported by individual and team analysis of complex cases, at least two of which are simulations. (Offered spring semester.)

**HMP.591 Health Management and Policy Rounds (0)**

Full year career development series including executive speaker sessions designed to expose students to the philosophical approaches, management styles, decision-making strategies and problem solving techniques of leading health care management and policy executives; professional development sessions offered to strengthen students' job search and career success skills; and training sessions for the Department's required internship program. (Offered fall and spring semesters.)

**HMP.594 Health Management & Policy Internship (0)**

Prerequisite: completion of all required course work in the first year of the student's curriculum and approval of the Department's Internship and Placement Coordinator. A required intensive 13-week field experience designed to provide students with an opportunity to employ skills and principles learned in the classroom while working in a health sector organization. (Offered annually.)

**HMP.595 Special Study for Examinations (0)****HMP.597 Research Topics (1-3)****HMP.598 Graduate Reading Course (1-3)****HMP.5CR.90 Master's Degree Study (0)****HMP.DIST Orientation to Community Benefit and Distance Learning (0)**

Prerequisite: enrollment in the CCB program. This orientation provides general overview information on community benefit and on being a distance-learning student through Saint Louis University School of Public Health. (Required each semester.)

# Saint Louis University Center for Outcomes Research (SLUCOR)

**Thomas Burroughs, Ph.D.,**  
*Executive Director SLUCOR*

The Center for Outcomes Research (SLUCOR) is one of three Centers at Saint Louis University with degree granting status. SLUCOR embraces the university's educational mission through courses at undergraduate and graduate levels, student mentorship, training programs for School of Medicine residents and fellows, directing the doctoral program in health services research / outcomes research, and offering a Master of Science in Health Outcomes Research and Evaluation Sciences.

## HEALTH OUTCOMES RESEARCH AND EVALUATION SCIENCES

**Leslie Hinyard, Ph.D., MSW,**  
*Associate Director of Academic Affairs*

The mission of the Saint Louis University Center for Outcomes Research (SLUCOR) is to be a national resource that informs health care and policy decisions with scientific information about quality and effectiveness. We solve complex design and analysis problems in medicine and public health. We are engaged in state-of-the-science evaluations of the services, medications, devices, and diagnostics that can optimize individual health and well-being. SLUCOR is also committed to translating research into policies and practices that improve health outcomes across the population. SLUCOR offers a Master of Science in Health Outcomes Research and Evaluation Sciences degree.

## Master of Science in Health Outcomes Research and Evaluation Sciences

The Masters of Science in Health Outcomes Research and Evaluation Sciences program is an entirely online program created in response to the current healthcare climate and need for researchers trained in the areas of health outcomes research, health services research, and program evaluation to meet the changing needs of our healthcare system. The primary goal of the program is to enhance the regional and national workforce with analytical capabilities and expertise necessary to conduct health outcomes research. The MS in Health Outcomes Research and Evaluation Sciences requires 36 credit hours and the completion of a capstone research project.

### Prerequisites

Completion of a graduate level inferential statistics course.

### Course of Study

HSR.530: Foundations of Outcomes Research I (3);  
ORES.540: Pharmacoeconomics (3); ORES.541: Evaluation Sciences (3);  
ORES.531: Foundations of Outcomes Research II (3);  
ORES.515: Multivariate Analysis for Health Outcomes Research (3); ORES.516: Applied Skills for Data Management (3);  
ORES.590: Health Outcomes Research Capstone (3);  
HSR.521: Foundations of Medical Diagnosis and Treatment (3); ORES.543: Health Outcomes Measurement (3);  
HSR.526: Pharmacoepidemiology (3); ORES.542: Clinical Trials (3); ORES.544: Comparative Effectiveness Research (3);

### Graduate Courses

#### HSR.510 Research Methods in Health and Medicine (3)

This online course is designed to provide an introduction to the techniques, methods, and tools used for research in the health sciences. Students will obtain an understanding of the research process and scientific method, specific study designs, methods for data collection and analysis. This is a very applied and hands-on course and is focused entirely on the unique aspects of research in the health sciences. This course will utilize Blackboard for all lectures, online discussions, assignment submission, and examinations.

#### HSR.521 Foundations of Medical Diagnosis and Treatment (3)

This course addresses fundamental areas of science, diagnostic approaches, and therapeutic strategies involved in the practice of medicine. Graduate students are introduced to basic science concepts of medicine, including anatomy, physiology, microbiology/hematology, infectious diseases, genetics, immunology, endocrinology, and metabolic pathways. The course also covers each of the primary organ systems and their associated diseases, with particular attention given to their diagnosis and treatment. The class, taught by medical school faculty from each of the respective specialties, employs a mix of lecture, discussion, laboratory, and patient care simulation.

#### HSR.526 Pharmacoepidemiology (3)

Offered by the Saint Louis University Center for Outcomes Research (SLUCOR) and the School of Public Health, this course addresses the use and effects of drugs in human populations. It provides an overview of the principles of pharmacoepidemiology, sources of data, and special methodological issues related to this field of study.

#### HSR.530 Foundations of Outcomes Research I (3)

This course will assist students in understanding outcomes research and provide a background in the basic tools used in outcomes studies. The course will enable students to: 1) Conceptually define the meaning and purpose of outcomes research, 2) Understand the role of epidemiology, biostatistics, health economics, and database and information technology in conducting outcomes research, 3) Evaluate the usefulness and utility of outcomes measures, 4) Recognize the different types of measures used in outcomes

research, including clinical, health status, quality-of-life, health care utilization, and patient satisfaction, 5) Obtain a basic appreciation of statistical analyses appropriate for outcomes research, 6) Interpret the results of health outcomes research.

#### **ORES.512 Practical Applications of Statistical Methods (3)**

This course aims to advance the student's skills in study design, data analysis, scientific writing, and presentation/communication. This will be realized by through a series of one-hour technical skill workshops, two-hour peer review sessions and series of consultation appointments. All activities are organized around the student's selected research project. The workshops will include a take-home assignment to recap key teaching points and assess skill competency. Students will engage in peer review and critique as part of this course. Each student will be paired with a statistics consultant to support analytic method selection, design a data management plan, and verify calculations. They will have access to this consultant for one additional semester after the end of this course. This course will be graded as pass/fail with students earning a pass if they attend all workshops and peer review sessions, attend meetings with their consultant as needed, and show progress on the steps to completing their thesis.

#### **ORES.515 Multivariate Analysis for Health Outcomes Research (3)**

This course is designed to provide students with the analytic skills needed to conduct statistical analyses including linear regression, ANOVA, logistic regression, and survival analysis.

#### **ORES.516 Applied Skills for Data Management (3)**

This course provides students with the data management skills necessary to manage data for health outcomes research studies. The course will cover topics including database design, data entry, data cleaning and manipulation, and checking for accuracy.

#### **ORES.520 Introduction to Statistics in the Biomedical Sciences (3)**

The purpose of this course is to introduce the basic principles and methods of statistics, providing students with a sound methodological foundation. This course will cover fundamental concepts and techniques of descriptive and inferential statistics with applications in the biomedical sciences. Basic statistics, including probability, descriptive statistics, inferences for means and proportions, regression methods, and nonparametric statistics are presented.

#### **ORES.528 Comprehensive Literature Review & Meta-Analysis (3)**

The medical literature is expanding at an exponential pace. Health care professionals are in need of the skills necessary to synthesize the medical literature into a fashion suitable for facilitating medical decision making. The skills learned and applied in this course will be invaluable for both masters students and doctoral students as they pursue careers in public health and medicine. The purpose of this course is to train physicians and public health professionals the skills necessary to conduct a comprehensive review of the literature and synthesize that review into a meta-analysis.

#### **ORES.531 Foundations of Outcomes Research II (3)**

This course will provide students with a thorough and in-depth look at study design, measurement, and database management. It is designed as an extension to Foundations of Outcomes Research I. Topics for the course include risk adjustment, cost-effectiveness research, comparative effectiveness research, database design and management, and secondary data analysis.

#### **ORES.540 Pharmacoeconomics (3)**

This course is designed to teach clinicians and new researchers how to incorporate pharmacoeconomics into study design and data analysis. Participants will learn how to collect and calculate the costs of different alternatives, determine the economic impact of clinical outcomes, and how to identify, track and assign costs to different types of health care resources used. The development of economic protocols and data collection sheets will be discussed. Different pharmacoeconomic models and techniques will be demonstrated and practiced in lectures and case studies. These include cost-minimization, cost-of-illness, cost-effectiveness, cost-benefit, and cost-utility analysis. Decision analysis, sensitivity analysis, and discounting will all be demonstrated and practiced. Participants will also learn to compare and evaluate interventions such as drugs, devices, and clinical services.

#### **ORES.541 Evaluation Sciences (3)**

This course will examine methods for evaluation of health programs in both organizational and community contexts. Topics include formative research, process evaluation, impact assessment, cost analysis, monitoring outcomes,

and evaluation implementation. Strengths and weaknesses of evaluation designs will be discussed.

#### **ORES.542 Clinical Trials (3)**

This course is designed to provide students with an understanding of the main concepts and issues in clinical trial design and interpretation. The course will concentrate on the design, conduct, analysis, interpretation, and dissemination of results in clinical trials research. Topics include power analysis, randomization (individual and group), study design, outcomes selection, generalizability, data monitoring, and federal regulations. The overarching goal of the course is to familiarize students with the clinical trials process.

#### **ORES.543 Health Outcomes Measurement (3)**

This course focuses on the techniques for measuring outcomes in clinical and health services research.

#### **ORES.544 Comparative Effectiveness Research (3)**

This course is designed to provide students a better understanding of the role of comparative effectiveness research in the US today as well as current methods in CER and relevant policy implications.

#### **ORES.590 Health Outcomes Research Capstone (3)**

This course is designed to allow students to integrate the knowledge and skills developed over the course of the MS in Health Outcomes Research and Evaluation Sciences Program. Students will design and complete an outcomes study or program evaluation over the course of the semester culminating in a formal presentation of the study and results. The overarching goal is to incorporate and utilize research skills in a real-world

## Graduate Programs in the School for Professional Studies

**Jennifer M. Giancola, Ph.D.**

*Dean*

**Elizabeth Callahan, J.D.**

*Associate Dean for Academic Development*

**John P. Buerck, Ph.D.**

*Chair, Computer Science Technology Department*

**Matthew J. Grawitch, Ph.D.**

*Director, Leadership and Organizational Development Program*

As a Jesuit institution, Saint Louis University has a longstanding, nearly 200-year-old tradition of serving students of all ages. SLU enhanced its focus on adult students in 1963, when it launched one of the first schools in the country dedicated to adult learners. Since then, the School for Professional Studies has evolved into one of the most innovative, adult-focused programs in the country.

#### **SPS Mission**

The School for Professional Studies offers globally-accessible, academic and professional programs for working students in Saint Louis University's Jesuit tradition of excellence. We

promote a student-centered, entrepreneurial environment built on a foundation of integrity and accountability.

### **M.A. in Leadership & Organizational Development Available Online**

The Leadership and Organizational Development (LOD) master's degree is a 36-hour program designed for working professionals wishing to pursue a professional master's degree while maintaining part- or full-time employment. With courses offered in online and blended formats in an accelerated 8-week term, this program makes advanced education more accessible for working professionals.

The program develops **12 competencies through project-based learning** in the areas of leadership and organizational development, with specific emphases at the personal, interpersonal/group, and organizational levels.

At the **Personal level**, students within this management training program at Saint Louis University will be able to:

- Make sound, ethical decisions;
- Effectively leverage their current leadership competencies and manage their future leadership development;
- Apply innovation and creativity to leadership situations; and
- Engage in evidence-based decision making.

At the **Interpersonal/Group level**, students will be able to:

- Provide coaching and mentoring to assist in employee development;
- Effectively facilitate group and interpersonal interactions; and
- Create and sustain a culture that promotes collaborative learning and performance across a diverse work environment.

At the **Organizational level**, students will be able to:

- Effectively engage in strategic visioning, with an emphasis on future-focused leadership;
- Apply a systems thinking framework in work settings;
- Implement projects in a way that integrates project management logistical needs with interpersonal leadership needs;
- Lead change initiative efforts in an organization; and Apply the consultation skills necessary to develop high-impact, results-focused initiatives;
- Apply the consultation skills necessary to develop high-impact, results-focused initiatives.

### **Project-Based Indicators of Success**

At the end of the LOD program, students will produce a variety of artifacts that document both their success and their commitment to future development and lifelong learning.

- *Assessment of Leadership Competencies.* During the program, students gain knowledge, skills, and

abilities that make them effective leaders. To evaluate their educational experience, students reflect on their own personal and professional development in the 12 competency areas.

- *Leadership Development Plan.* Students develop their own personal leadership development plan that includes a formal leadership philosophy, specific strengths and developmental opportunities identified by the student, and clear action plans for future development.
- *Action Research Project.* A capstone experience requires that students plan and execute an action research project within their organization. This allows students to demonstrate program competencies while completing a project that adds value to their organization.

With the Leadership & Organizational Development Master's Degree, you will develop a portable set of knowledge and skills that aren't about how to perform your job, but are about how to be a leader as it applies to your current job, your future job and all areas of your life.

### **Admissions Criteria**

Minimal qualifications for obtained acceptance into the program are the following:

- **Work Experience:** Applicant must be employed on at least a part-time basis (20 hours or more per week) and have at least 3 years of work experience
- **Undergraduate GPA:** 3.0 or higher on a 4.0 scale- If a student possesses less than a 3.0 undergraduate GPA, the student will be required to take the Graduate Records Examination. Minimum scores on the GRE - General Test are 500 quantitative and 500 verbal. The GPA requirement applies even to students bridging from the School for Professional Studies Organizational Studies Program.
- **Course work in the following areas:**
  - At least 1 undergraduate leadership or organizational theory course
  - At least 1 basic statistics or research methods course
  - At least 1 psychology course, General Psychology accepted
  - At least 1 business-related course
  - Students missing any of the pre-requisites will be permitted to fulfill those at SPS prior to acceptance into the LOD program
- It is expected that incoming students have a basic, working knowledge of a standard word processing program (e.g., Microsoft Word), a standard spreadsheet or database program (e.g., Microsoft Excel, Microsoft Access, SPSS), and a standard presentation program (e.g., Microsoft PowerPoint).
- At least 3 letters of recommendation from reputable sources (e.g., faculty, employer, co-workers). This

requirement will be waived for students bridging from the SPS undergraduate Organizational Studies Major.

- A 3-5 page goal statement describing: (a) why a Master's degree in Leadership and OD is needed within the applicant's job or career area, (b) why the applicant feels the M.A. program at SLU will help meet that need, and (c) evidence to support the students assertions, along with appropriate citations.
- All applicants will be required to submit a current resume or curriculum vita with application materials.

### Careers in Leadership & Organizational Development

Leadership is a competency that can make a strong positive contribution at all levels of any organization. The benefits to you, your organization, and your career increase significantly with a Master's degree from our Leadership & Organizational Development program when your work role involves any of the following requirements.

#### 1. Does your role involve managing the talent of an organization?

Most supervisory and management roles in an organization involve finding ways to identify talented workers and create an engaging work environment. In the Leadership & Organizational Development Program, at the Saint Louis, Missouri campus and online, you will learn how to better motivate and inspire others, as a way to increase engagement and optimize results.

#### 2. Does your role involve human resource functions?

Human resource roles involve working with employees across the organization, from sales and marketing to production to finance. These roles focus on improving the way employees interface with the organization. In many cases, human resource professionals also design and deliver training throughout the organization. In the Leadership & Organizational Development Program, you will take leadership and management courses at Saint Louis University as well as learn how to create a work environment that supports employee development - one that optimizes both organizational effectiveness and employee well-being.

#### 3. Does your role involve developing a strategy and seeking commitment to that strategy?

Key decision makers in organizations are required to think and act strategically. Strategic thinking and action requires attention to the long-term, the big picture so to speak. Unfortunately, most people are not naturally-inclined to think and act strategically, and many key decision makers have never had the opportunity to actually develop their strategic competencies. In the Leadership & Organizational Development Program, you will be provided developmental opportunities to sharpen your strategic leadership skills, emphasizing such areas

as visioning, empowerment, scenario planning, and strategic planning.

#### 4. Does your role involve designing, overseeing, or leading change initiatives in the organization?

Many roles within an organization require involvement in change initiatives. Organizational development functions often have the primary responsibility for change management; but human resource professionals, managers, and executives often are required to develop, oversee, lead, and obtain buy in for new change initiatives. In the Leadership & Organizational Development Program you will learn the skills and competencies necessary to effectively lead change initiatives through leadership and management courses. Whether those changes are small (such as a departmental training program) or large (such as organizational re-structuring), the program will provide you with opportunities to improve the way you think about, plan, and execute change in your organization.

## Graduate Courses in Leadership and Organizational Development

### ORLD 500 Organizational Dynamics (3) -- ONLINE

This course provides a foundation in organizational theory and practice; and introduces students to the field of organizational development. It provides students with a framework for understanding and changing organizations from a micro to macro level. Students will learn how to create an organization that is responsive to environmental forces; and align the organization's structure and culture with the strategy. The course is applicable to different types of large and small, private and public entities in the contemporary business environment. As part of the course, students will engage in in-depth case study development and analysis of real world businesses.

### ORLD 501 Contemporary Organizational Leadership (3) -- ONLINE

This course provides an introduction to leadership, highlighting historical and contemporary perspectives and research findings. Students will review fundamental leadership approaches and theories and examine the role of leaders in the 21st Century. Students will also study leadership development approaches and the impact of effective and ineffective leadership within organizations. Strategic leadership practices will be identified and direct application will be emphasized at the individual, interpersonal/group, and organizational level. Throughout the course, students will create an integrated model of leadership based on credible perspectives, theory, and research findings. Integrated models can be directly applied to an organization that the student studies throughout the course.

### ORLD 502 Organizational Informatics (3) -- ONLINE

This course introduces students to the field of organizational informatics, the collection, organization, and use of data to make evidence-based decisions in organizations. Students will learn an action research paradigm that focuses on data collection, synthesis, and dissemination. Students will learn the strengths and weaknesses of different types of data (e.g., subjective self-report, bottom-line performance data, market data), format (qualitative vs. quantitative), and methods (i.e., action research design). Students will learn how to evaluate the credibility of data and how to use data from multiple sources to make informed decisions. Lastly, students will learn some of the key ways to analyze qualitative data (e.g., chi-squared) and quantitative data (e.g., descriptive statistics, correlations, t-test).

### ORLD 510 Professional Leadership Development (3) -- ONLINE

This course focuses on professional leadership development. The course is designed to improve personal awareness in the areas of self-management, professionalism, work attitudes and motivation, personality, innovation and

creativity, communication, diversity, and ethical decision making. In addition, students will gain an appreciation and understanding of the diverse individual differences that leaders encounter in a global workforce. Students can apply concepts from this class to their own professional development and also use concepts to promote and sustain a diverse working environment. Upon completion of this course, students will recognize their strengths and weaknesses and create a professional development plan that emphasizes self-management practices.

**ORLD 515 Talent Management and Development (3) -- ONLINE**

This course looks at talent management and development in organizations from a holistic, systems perspective. Talent management begins with the recruiting and staffing process and moves through the entire life-cycle of the employee as an active contributor in the organization. Students will study the major theories and approaches to selecting and developing employees. Topics that will be covered include strategic selection, employee and leadership development, assessment options for selection and development, workforce planning, and employee motivation and retention. We will also discuss contemporary topics such as use of technology to implement talent management and development, multi-media methods for coaching and mentoring, and applied models for talent planning and succession planning.

**ORLD 525 Leading a Healthy Organization (3) -- ONLINE**

This course focuses on the issue of organizational health. Students will develop a working definition of organizational health, focusing on elements of employees and the organization. Students will also learn how the organizational environment can promote positive or negative health, with a specific emphasis on the critical role of stress. Specific types of interventions will be discussed as a way to provide a comprehensive framework for discussing organizational health. Students will learn how to design, implement, and evaluate key interventions related to organizational health, such as work-life balance, wellness, and employee involvement initiatives. Students will then develop a plan for designing, implementing, and evaluating an intervention in their organization.

**ORLD 535 Team Leadership (3) -- ONLINE**

The ability of a group to function as a team to run things, to make things, or to provide recommendations about things is a powerful organizational dynamic. This course addresses teaming as a leadership tool to be used in appropriate situations to maximize individual talent through collective interactions. Students will learn what makes a group a team, how to build and lead a team, and how to facilitate team performance. Structured exercises and assessments carried out both in and outside of the classroom will provide students with teaming experiences that develop their team consultation and facilitation skills. The most recent body of research literature will be used to develop a realistic understanding of what teaming can and cannot do as a leadership tool.

**ORLD 545 Leading Organizational Change (3) -- ONLINE**

This course is designed to prepare students to lead organizational change efforts directed at improving organizational functioning and quality of work life. A general framework of planned change combined with the organizational development perspective of leading change will be used to introduce students to change facilitation tools and techniques. Using case studies, students will design change interventions and change management strategies using group simulations, demonstrating change agent competencies in the areas of systems thinking, action research, consultation skills, project management, and strategic visioning. Awareness of the empirical evidence underlying the strategic, techno structural, human resource, and human process change strategies will be identified.

**ORLD 565 Future-Focused Leadership (3) -- ONLINE**

This course focuses on the competencies necessary to be a future-focused leader. Students will learn how to think about the future, in terms of visioning, scenario planning, and systems thinking. As a key component of the course, strategic elements will be introduced. In addition, students will learn the value of creativity and innovation in developing a future-focused approach to leadership. As a key component of the course, students will be asked to develop a future-focused vision for their work unit or organization.

**ORLD 575 Contemporary Issues in Leadership (3) -- ONLINE**

This course will be focused on contemporary issues in leadership. Students will use cases and recent scholarly and popular press media to explore some of the issues at the forefront of leadership, such as ethics, followership, and leadership assessment. This course will be designed as a way to spark advanced discussion on the topic of leadership, allowing students to go more

in depth into contemporary leadership topics and paradigms. Students will produce a reflection paper focuses more in depth on one of the topics covered in the course.

**ORLD 590 Action Research I (3) -- ONLINE**

This course serves as the first capstone experience for SPS Graduate students. Students will revisit program competencies emphasized by the program and reflect on the ways in which they have developed themselves within those competency areas and within the 5 dimensions of the SLU experience. Specific attention will be paid to strengths and weaknesses of the student, as well as opportunities for programmatic improvement. This will culminate in a formal development plan for the student. Lastly, during this course, students will be assigned an onsite mentor, who will work with the student to develop a proposal for an action research project. The project will be implemented and summarized in ORLD 595: Action Research II.

**ORLD 595 Action Research II (3) -- ONLINE**

This course serves to complete the capstone requirement for SPS Graduate students. Students will conduct their action research project and produce a summary of synthesis of their results. The capstone project will include evidence that the student has successfully applied the competencies taught within the program.

## M.S. in Organizational Informatics

The Organizational Informatics master's degree is a 36-hour program designed for working professionals wishing to pursue a professional master's degree while maintaining part- or full-time employment. With courses offered in online and blended formats in an accelerated 8-week term, this program makes advanced education more accessible for working professionals.

The online information technology management degree program at Saint Louis University develops **12 competencies through project-based learning** in the area of Organizational Informatics, with a specific emphasis on personal, interpersonal/group, organizational management, and technological competencies.

At the **Personal level**, you will be able to:

- Make sound, ethical decisions; and
- Practice evidence-based decision making.

At the **Interpersonal/Group level**, you will be able to:

- Create and sustain a culture that promotes collaborative learning and performance across a diverse work environment.

At the **Organizational and Management level**, you will be able to:

- Apply a systems thinking framework in work settings; and
- Lead change initiative efforts in an organization.

At the **Technological level**, you will be able to:

- Demonstrate knowledge and understanding of essential facts, concepts, principles, and theories relating to informatics and informatics applications;
- Analyze, design, develop, and code modern software applications that address informatics-based science and industry issues;
- Examine and apply the principles of effective information organization and management to support knowledge discovery and dissemination;

- Demonstrate the ability to effectively integrate the skills of inquiry, critical thinking, problem solving and logical assessment;
- Understand and explain the quantitative and qualitative dimensions of a situation through applied research;
- Analyze and evaluate the ethical considerations that are associated with the modern field of informatics; and
- Develop the awareness to keep abreast of current trends and advances within their respective discipline.

### Admissions Criteria

Student applications will be evaluated by the admission committee. Minimal qualifications for obtained acceptance into the program are the following:

- An undergraduate degree from an accredited institution.
- Work Experience: Applicant must be employed on at least a part-time basis (20 hours or more per week) and have at least 3 years of work experience
- Undergraduate GPA: 3.0 or higher on a 4.0 scale - If a student possesses less than a 3.0 undergraduate GPA, the student will be required to take the Graduate Records Examination. Minimum scores on the GRE - General Test are 500 quantitative and 500 verbal. The GPA requirement applies even to students bridging from the School for Professional Studies Computer Science Technology Program.
- Course work in the following areas:
  - At least 1 course in information systems, information technology or a programming language.
  - At least 1 basic statistics or research methods course.
- It is expected that incoming students have a basic, working knowledge of a standard word processing program (e.g., Microsoft Word), a standard spreadsheet or database program (e.g., Microsoft Excel, Microsoft Access, SPSS), and a standard presentation program (e.g., Microsoft PowerPoint).
- At least 3 letters of recommendation from reputable sources (e.g., faculty, employer, co-workers). This requirement will be waived for students bridging from the SPS undergraduate Computer Science Technology Program.
- A 300-500 word personal statement describing the applicant's interest in the program and how the applicant plans to use the degree.
- All applicants will be required to submit a current resume or curriculum vita with application materials.

### Career Paths

A Master's Degree in Organizational Informatics prepares you to pursue careers in today's dynamic multi-disciplinary work

place. Through our organizational development program, at our St. Louis, Missouri campus and online, you will combine the use technology with organizational leadership to support knowledge discovery and dissemination, assisting the decision maker across a variety of academic disciplines and professional fields and preparing you for jobs in:

- Business & Industry
- Private for Profit and Not-for-Profit
- Government
- Information Technology
- Health Care
- Life Sciences
- Education
- Security & Intelligence
- Military
- Many more...

Organizational Informatics encompasses a wide variety of specialties, as well as new areas of job opportunities. Career opportunities for graduates include:

- Information Officers
- Project Managers
- Solution Architect
- System Support Specialist
- Clinical Informatics Analyst/Manager
- Business Solution Manager
- System Integration Manager
- Data Analysis Manager
- Research Analyst/ Manager
- Compliance Manager
- Business Systems Analyst
- Information Security Analyst/Manager
- Assessment System Administrator

### Graduate Courses in Organizational Informatics

#### IF 500 Informatics Foundations (3) -- ONLINE

A multidisciplinary introduction to the informatics principles that support knowledge discovery and dissemination – the ways data are collected, organized, analyzed, represented, managed and communicated. Selected topics include basic information representation, processing and analysis, organizational informatics, current applications and trends in informatics, legal issues in informatics, the roles and responsibilities of informatics professionals, and informatics impact on the evolution of society.

#### IF 505 Programming & Problem Solving (3) -- ONLINE

A survey of the computer programming concepts used to solve problems within the study of informatics. The course will emphasize logical problem analysis, program development techniques, data organization and user interface concepts used to develop informatics applications.

#### IF 510 Knowledge Management (3) -- ONLINE

This course will examine emerging knowledge management processes used in organizations to support and achieve their strategic goals and objectives. Key concepts of database and interface design principles used to implement knowledge management and dissemination will be explored using multidisciplinary examples. Topics will include techniques and skills in data modeling, database architecture and design, application development and knowledge management systems implementation.

#### IF 515 Evidence-Based Decision Making (3) -- ONLINE

This course provides the essential foundation of how one uses data to change the organization through an evidence-based decision making process. Students will have the opportunity to learn about and practice critical evaluation of data across a variety of disciplines. Topics will include logic models, decision

making models, cybernetic systems, project/program evaluation, and ways to promote learning and innovation.

**IF 520 Information Visualization & Presentation (3) -- ONLINE**

This course will expose students to visualization and presentation techniques designed for the interpretation of data, improved comprehension, communication, and decision making. Students will use current software tools to analyze data, design interfaces and create interactive visualization and presentation applications. Topics will include data and image models, design and evaluation of reporting structures, maps and mapping, document collections, object interaction, feedback processes, and scientific and business simulations.

**IF 525 Project Management (3) -- ONLINE**

This course introduces students to the processes involved with managing a corporate level project from its beginning through implementation and ongoing maintenance. The course will cover current project management methodologies and processes, which include plan assessment, strategy formulation, implementation, quality control, and administration. In addition, the student will develop and review project plans for a corporate level project. The goal of the class is for the student to be able to understand and communicate the basics of managing projects, as well as the competitive advantage these projects bring within the business and industry.

**IF 575 Contemporary Issues in Informatics (3) -- ONLINE**

This course will be focused on contemporary issues in informatics. Students will use cases, recent scholarly and popular press media to explore some of the issues at the forefront of informatics, such as ethics, data privacy, analytics, and visualization. This course will be designed as a way to spark advanced discussion on the topic of informatics, allowing students to go more in depth into contemporary application of informatics. This course will occur in three phases. Phase 1 of the course will involve interaction inside of the virtual classroom to stimulate discussion. Phase 2 of the course will involve ongoing reflection and discussion in the virtual classroom, resulting in a reflection paper that focuses more in-depth on one of the topics covered in the course.

**IF 590 Applied Informatics Project I (3) -- ONLINE**

The goal of the Applied Informatics Project I is to prepare students in the areas of inferential statistics, the research process, study/project design and outcome analysis. Students will revisit competencies emphasized by the program and reflect on the ways in which they have developed themselves within those competency areas. Specific attention will be paid to strengths and weaknesses of the student, as well as opportunities for programmatic improvement. Lastly, during this course, students will be assigned an on-site mentor, who will work with the student to develop a proposal for an applied informatics project.

**IF 591 Applied Informatics Project II (3) -- ONLINE**

The goal of the Applied Informatics Project II is for the student to use the skills they acquired over the course of their studies in informatics to analyze, develop and implement research plans leading to the production of a pilot project, a proof of concept or a prototype system that has the potential to impact and/or promote knowledge discovery and dissemination.

**ORLD 500 Organizational Dynamics (3) -- ONLINE**

This course provides a foundation in organizational theory and practice; and introduces students to the field of organizational development. It provides students with a framework for understanding and changing organizations from a micro to macro level. Students will learn how to create an organization that is responsive to environmental forces; and align the organization's structure and culture with the strategy. The course is applicable to different types of large and small, private and public entities in the contemporary business environment. As part of the course, students will engage in in-depth case study development and analysis of real world businesses.

**ORLD 501 Contemporary Organizational Leadership (3) -- ONLINE**

This course provides an introduction to leadership, highlighting historical and contemporary perspectives and research findings. Students will review fundamental leadership approaches and theories and examine the role of leaders in the 21st Century. Students will also study leadership development approaches and the impact of effective and ineffective leadership within organizations. Strategic leadership practices will be identified and direct application will be emphasized at the individual, interpersonal/group, and organizational level. Throughout the course, students will create an integrated model of leadership based on credible perspectives, theory, and research

findings. Integrated models can be directly applied to an organization that the student studies throughout the course.

**ORLD 502 Organizational Informatics (3) -- ONLINE**

This course introduces students to the field of organizational informatics, the collection, organization, and use of data to make evidence-based decisions in organizations. Students will learn an action research paradigm that focuses on data collection, synthesis, and dissemination. Students will learn the strengths and weaknesses of different types of data (e.g., subjective self-report, bottom-line performance data, market data), format (qualitative vs. quantitative), and methods (i.e., action research design). Students will learn how to evaluate the credibility of data and how to use data from multiple sources to make informed decisions. Lastly, students will learn some of the key ways to analyze qualitative data (e.g., chi-squared) and quantitative data (e.g., descriptive statistics, correlations, t-test).

## Graduate Programs in the John Cook School of Business

[Click here](#) for more comprehensive information about graduate programs in the John Cook School of Business.

Graduate Business Programs, John Cook School of Business, Saint Louis University, 3674 Lindell Boulevard, St. Louis, MO63108 USA or phone: 800. SLU.FOR.U or 314.977.6221, Fax: 314.977.1416 or e-mail: [gradbiz@slu.edu](mailto:gradbiz@slu.edu)

### Course Descriptions

#### Accounting Graduate Courses

**ACCT 501 Accounting for Managers (3)**

Focuses on the business environment and the use of managerial and financial accounting information for decision making in various business settings. Emphasizes the use of firm accounting information by internal and external users, including financial statement analysis, accrual accounting concepts, inventory and receivables, and the fundamentals of managerial accounting, cost volume profit relationships and the budgetary process.

**ACCT 598 Graduate Reading Course**

Pre-requisites: Permission of the department chair

**ACCT 600 Managerial Accounting Concepts (3)**

Pre-requisites: ACCT 501

Designed to provide a systematic understanding of the role of management accounting systems and strategic cost management in today's manufacturing and service organizations. While covering and highlighting the limitations of traditional, functional-based cost accounting models, it also includes coverage of such contemporary management accounting topics as activity-based costing and activity-based management. Provides an understanding of the appropriate use of the different approaches to bring about necessary change. Such topics as the balanced scorecard, target costing and quality costs are also covered.

**ACCT 603 Contemporary Financial Reporting (3)**

Pre-requisites: ACCT 501 or permission of the instructor

This course applies professional research methods to the identification and application of financial reporting standards to cases involving actual business situations. The objective of the course is to develop students' critical thinking, verbal and written communications, and group interaction skills.

**ACCT 611 Financial Reporting III (3)**

Pre-requisites: ACCT 411

A study of advanced accounting topics including: accounting for business combinations (mergers and acquisitions), preparation of consolidated financial statements and specific issues related to intercompany investments; accounting for selected international events (e.g., foreign currency transactions, translation of financial statements of foreign affiliates, and the



use of forward exchange contracts); significant coverage of accounting for not-for-profit entities; and other selected topics of current interest. Discussion of ethical implications will be included in many of these topics.

#### **ACCT 612 Seminar in Accounting Theory and Reporting Issues (3)**

Pre-requisites: ACCT 501 or permission of the instructor

Analysis of accounting theory regarding income determination and reporting problems: significance of the income statement in contemporary economy. Development of concepts of income, their influence on accounting theory; review of principles relating to income determination; current problems in computing and reporting net income.

#### **ACCT 614 Seminar in Accounting and Society (3)**

Pre-requisites: ACCT 501 or permission of the instructor

Accounting in society: past, present, and future, with emphasis on areas of increasing social importance. Topics include the historical significance of accounting, socioeconomic accounting, corporate social accounting, social audits, role of the professional accountant in accounting for social performance, cost-benefit analysis, environmental accounting, and accounting for human resources.

#### **ACCT 616 International Accounting (3)**

Pre-requisites: ACCT 501 or permission of the instructor

Multidimensional examination of worldwide accounting principles and practices. Comparative study of the profession in response to various socioeconomic environments. Theories of national practices and progress toward uniformity of accounting, auditing, and reporting standards. Problems of multinational corporations, inventory methods, currency translations, consolidated statements, price adjustments, transfer prices, taxes, and treaties.

#### **ACCT 619 Financial Statement Analysis (3)**

Pre-requisites: ACCT 411 or FIN 600 or permission of the instructor

This course is designed to integrate the conceptual framework of accounting with analytical and critical thinking skills to evaluate how businesses function. This integration will focus on managerial uses of financial reporting information to enhance the value of the firm. The course pedagogy will focus on case analysis and related class discussion.

#### **ACCT 621 Issues in Strategic Cost Management (3)**

Pre-requisites: ACCT 600

Covers advanced topics in managerial accounting such as cost analysis for pricing, activity costing, JIT production, measuring quality, executive bonus plans, and problems of competing in a world economy.

#### **ACCT 631 Tax Planning for Individual and Entrepreneurial Business (3)**

Pre-requisites: ACCT 501

The main objective of this course is to teach students to recognize the major tax issues inherent in business and financial transactions. The course focuses on fundamental concepts with the goal that an understanding of income taxation is relevant and critical to making good business and financial decisions.

#### **ACCT 632 Federal Income Taxation: Flow-Through Entities (3)**

Pre-requisites: ACCT 631 or permission of the instructor

A study of the Federal Income Tax as it applies to entities other than individuals, including partnerships, corporations, decedents, estates, trusts, and retirement plans. Fundamentals of estate and gift taxation are also considered.

#### **ACCT 634 Advanced Corporate Income Tax (3)**

Pre-requisites: ACCT 430 or ACCT 631

Understanding the complexities of the Internal Revenue Code in defining, organizing, and computing the tax liabilities of corporations. Economic ramifications of alternative approaches to corporate taxation.

#### **ACCT 635 State and Local Taxation (3)**

Pre-requisites: ACCT 430 or ACCT 631

The objective of this course is to provide an overview of the principles of state and local taxation and a more specific sampling of Missouri (and occasionally) Illinois state tax issues.

#### **ACCT 636 Seminar in Tax Research (3)**

Pre-requisites: ACCT 430 or ACCT 631

The course objective is to introduce students to tax research source materials and to provide students with the opportunity to conduct tax research. After the

course, students should be able to identify tax issues, locate and evaluate various sources of tax law, and effectively communicate conclusions and recommendations from their research.

#### **ACCT 638 Wealth Planning (3)**

Pre-requisites: ACCT 430 or ACCT 631

Methods utilized by estate owner in planning family security and benefits from the estate. Examines impact of Subtitle B of the Internal Revenue Code and sections of the code relating to transfer of property for charitable purposes. Minimizing current and future taxes and preserving estate values is a primary consideration.

#### **ACCT 639 International Taxation (3)**

Pre-requisites: ACCT 501 or ACCT 430, or consent of the instructor

Course covers the interaction of the US tax system with foreign tax systems. Primary focus is on the US taxation of multinational corporations. Comparative analysis of alternative tax systems.

#### **ACCT 645 Fraud and Forensics (3)**

Pre-requisites: ACCT 440, or permission of the department chair

This course will be a study of the various dimensions of forensic accounting. The course is structured as an overview course that will utilize the text and be supplemented by content brought to the course by the instructor. The course is derived from the content specific outline and the body of knowledge used by the AICPA in its examination of candidates for the Certified Financial Forensics specialty credential. The CFF body of knowledge is detailed at [www.aicpa.org](http://www.aicpa.org). This course is not intended to and will not cover the entire body of knowledge for the CFF credential. This course is not intended to be used as a CFF examination review course.

#### **ACCT 650 E-Business: Strategic Applications and Controls (3)**

This course will explore issues involved in the design, development, implementation, monitoring and management of e-business applications. Topics to be covered include (1) E-Business security, risk management and control, (2) strategic business analysis and measurement of E-Business success and (3) integrating your enterprise, business processes and controls utilizing E-Business applications and the internet.

#### **ACCT 660 Research in Contemporary Accounting Issues (3)**

This course is designed to be an elective course for Masters of Accounting students. The objective is to enhance students' research, analysis, understanding, and communication skills. This is a self-directed course with no set class time. The student will identify a research project and contact a full-time accounting professor to oversee their work. For more information, contact Dr. Ananth Seetharaman or Dr. Jack Kissinger.

#### **ACCT 680 Accounting Internship (3)**

Pre-requisites: Permission of the department chair

### **Decision Sciences Graduate Courses**

#### **DSCI 502 Quantitative Methods and Statistics (3)**

Provides a survey of topics in statistics with particular emphasis on empirical data analysis and the model building process. Emphasis is on application and understanding of the statistical tools, mathematical concepts, and processes. Statistical packages such as SAS, SPSS, and Minitab are utilized along with Excel spreadsheet templates.

#### **DSCI 505 Operations Management (3)**

Pre-requisites: DSCI 502

Designed to familiarize students with production planning and control and the use of operations research techniques for analyzing and controlling manufacturing. Includes concepts of project management and linear programming, manufacturing and process selection, supply chain management, planning and scheduling, and the theory of constraints.

#### **DSCI 598 Graduate Reading Course (3)**

Pre-requisites: Permission of the department chair

#### **DSCI 600 Demand Management and Forecasting (3)**

Pre-requisites: DSCI 502 (Applied Business Statistics) or Instructor's Approval. The objective of this course is to explore demand management tools pertinent to forecasting products and a sku based approach within the supply chain framework. Data collection at point of sales (POS) is the main

source of data gathering for the micro forecasting process. Although the main thrust is on demand management at a micro level (sales), macro forecasting tools will be also explored to set a global outline under which micro forecasting is encouraged and explored. In that sense, this course utilizes typical forecasting tools such as moving average, time series analysis, regression and correlation analysis and other statistical models typically found in traditional statistical textbooks. Extensive case studies and guest lectures will be utilized in this course to supplement the Instructor's lecture. Students are expected to engage in real case studies in this class. Use of known statistical packages such as SAS, SPSS, Excel, etc. is expected.

### **DSCI 605 Integrated Production/Operations Management (3)**

Pre-requisites: DSCI 502

Designed to familiarize students with decision-making tools and models that are utilized by operational managers to present business firm integrated operational practices in the manufacturing and service sectors, and to analyze and examine the business strategic planning process from a cross-functional perspective, utilizing case studies. Topics include: operations and supply-chain strategy, project management, strategic capacity management, job scheduling and control, logistics for facility location decisions, aggregate planning, and deterministic/stochastic inventory decisions.

### **DSCI 643 Quality and Process Management (3)**

Pre-requisites: DSCI 505

This course is intended to serve as an in-depth examination of quality principles applied specifically to manufacturing, service and supply chain environments. Both managerial and statistical aspects will be covered.

### **DSCI 644 Global Supply Chain Management Concepts, Design, and Strategies (3)**

The objective of this course is to introduce students an integrated enterprise approach of flow of goods, services and information from suppliers to customers (supplier relationship, procurement/strategic sourcing, operations management, inventory control, logistics and transportation, distribution, customer service and information technology). The term INTEGRATED process is emphasized in this course as opposed to SILO approach. As such, every topic in each area is being discussed in the context of integrated flow of goods, and services from suppliers to customers and continuous flow of information from the customers to the suppliers. This course is based on concept that VALUE IS CREATED BY GLOBAL PROCESS AND NOT BY EVENTS. Accordingly, "system thinking" is the underline theme for this course. Wherever appropriate, financial aspects of supply chain management will be introduced and discussed.

### **DSCI 645 Computer Integrated Global Supply Chain Chains (3)**

Pre-requisites: DSCI 505 or DSCI 605

The objectives of this course are: (1) to acquaint the student with characteristics of the flow of information and material along supply chains, (2) to expose the student to methods of integrating information technologies along supply chains, (3) to familiarize the student with the technologies used in coordinating intra- and inter- organizational activities, (4) to acquaint the student with the role of second generation WEB in the integration of global supply chains, and (5) to introduce the students to software used for intra- and inter- organizational coordination.

### **DSCI 646 Global Logistics and Operations Management (3)**

Pre-requisites: DSCI 505

The objectives of this course are: (1) to acquaint the student with the use of logistics management theory and techniques for analyzing and controlling global manufacturing and operations management systems; (2) to expose the student to several of the most widely utilized models for supply chain management in the manufacturing and service sectors (financial, health care, public sectors, etc.), along with case studies; and (3) to familiarize the student with the use of computer software in facilitating logistics and operations management decisions.

### **DSCI 648 Strategic Sourcing and Procurement in Supply Chain Management (3)**

Pre-requisites: DSCI 644 (Global Supply Chain Management) or Instructor's Approval. The objective of this course is to acquaint the student with the use of purchasing and strategic sourcing concepts to optimize supply chain operations. As the share of spends in supply chain is substantial and growing along with sourcing to the low cost country (LCC) to continue, supply chain experts need comprehensive knowledge and tools to capture strategic

advantages of procurement and sourcing. Total cost of ownership (TCO) will be the main guideline in making procurement and sourcing decisions.

### **DSCI 650 Mathematical Statistics for Business (3)**

Pre-requisites: DSCI 502

Study of advanced statistical methods including multivariate statistics and linear models. Calculus-based study of probability and statistics emphasizing theoretical foundations of inferential models. Topics include probability theory, discrete and continuous random variables, probability functions, univariate and multivariate probability distributions, stochastic process sampling distributions, estimation and hypothesis testing.

### **DSCI 652 Transportation and Warehousing Management (3)**

Pre-requisites: DSC644 (Global Supply Chain Management) or instructor's Approval. Transportation and warehousing play a critical role in optimizing global supply chain operations. The total amount of inventory IN this country was \$1.9 trillion (over 14% of GDP) and the total transportation cost was \$635 billions (49% of the total logistics cost) in 2006. A small strategic intervention in these two areas along supply chain operations could result in a sizeable supply chain/logistics cost savings. In this course, discussions will be centered on strategic decisions on selecting the right transportation modes and optimum size/location of warehousing/distribution centers (hub). Transportation/ warehousing management plays an important role in achieving such an objective. Existing software will be extensively used to minimize the total cost in transportation and warehousing costs. Frequent site visits to transportation hubs, distribution centers and warehousing complexes will augment lecture to enhance the understanding of transportation/warehousing issues in supply chain management.

### **DSCI 655 Special Topics in Supply Chain Management (3)**

Pre-requisites: DSC644 (Global Supply Chain Management) or Instructor's Approval

In this course, contemporary and emerging topics in logistics and supply chain management will be introduced and discussed. Although it is difficult to list all topics under this course since issues and tools in supply chain management are constantly changing, several topics seem to be important at this time; risk management, lean/six sigma in supply chain, supply chain security, reverse/sustainable supply chain management and healthcare supply chain management. In-depth discussion of each topic and others pertinent to this course will be introduced. A use of extensive guest lecturers also will be utilized to dive deeper into each subject.

### **DSCI 680 Business Applications of Multivariate Statistical Methods (3)**

Pre-requisites: DSCI 650

Systematic treatment of multivariate methods and their application to business decision-making. Topics include general multiple regression, model selection, the multi-normal probability distribution, analysis of variance and covariance multivariate statistical inference, discriminant analysis, canonical correlation, principal components and structural equations. Applications are introduced in marketing, management, industrial relations and economics.

## **Economics Graduate Courses**

### **ECON 501 Economics for Managers (3)**

Focuses on the economic decisions made by managers of firms, and the structures of various market environments within which these decisions are made. Addresses market demand, supply and price movements, production and cost functions, and business competitive strategy in output and input markets.

### **ECON 560 Executive in Residence (1-3)**

Pre-requisites: ECON 501 or permission of department chair

A course offered to selected graduate or professional students by a regionally or nationally distinguished executive in the field of economics.

### **ECON 574 Quantitative Methods in Business and Economics (3)**

Pre-requisites: ECON 501

Matrix algebra, differentiation, optimization, integration, elementary dynamics, first order differential equations, applications to business and economic analysis.

### **ECON 598 Graduate Reading Course**

Pre-requisites: Permission of the department chair

### **ECON 600 Managerial Economics (3)**

Economic tools and concepts that managers utilize for strategic decision making. Specifics topics include concepts of elasticity, efficiency of competitive markets, cost profit volume analysis, marginal analysis and optimal decision making, market structure, pricing strategy, and forecasting. Rigorous analytical treatment of relevant data is emphasized through case analysis and problem assignments.

**ECON 605 Econometrics I (3)**

Pre-requisites: ECON 501 & DSCI 502

Classical linear regression models through generalized least squares. Econometric problems resulting from non-traditional assumptions and techniques.

**ECON 606 Econometrics II (3)**

Pre-requisites: ECON 605

Formulation and estimation of simultaneous equation systems. Special models and their application with emphasis on applied economic research.

**ECON 608 Industrial Organization and Antitrust Policy (3)**

Pre-requisites: ECON 501

Structure, behavior and performance of U.S. markets. Economic theory, case studies and law are utilized to explore the causes of monopoly power, its effect on rivals and social consequences. Role and effect of anti-trust policy in curbing abuses of monopoly power are also explored.

**ECON 616 Economic Development (3)**

Pre-requisites: ECON 501

Concept and measurement of development. Includes the political economy of the Third World; review of comparative historical and theoretical approaches to growth and development; an analysis of population change, migration, education, the role of private and public capital, and international linkages.

**ECON 617 History of Economic Thought (3)**

Pre-requisites: ECON 501

Critical assessment of the origins and development of modern economic thought, from ancient time, through the 19th century.

**ECON 620 Monetary Theory (3)**

Pre-requisites: ECON 501 & ECON 652

Advanced analysis of monetary economics. Examines the relation between the money supply and output and prices, and the transmission mechanism between changes in the money supply and other variables.

**ECON 630 International Trade (3)**

Pre-requisites: ECON 501

Advanced-level study of the determinants and patterns of trade between nations and regions; efficiency welfare, and distributive effects of trade; protectionism and the instruments of trade policy.

**ECON 631 International Economics: Exchange Rates and Intl. Adjustment (3)**

Pre-requisites: ECON 501, ECON 630 recommended.

Balance of international payments; alternative theories of adjustment to disequilibrium in the balance of payments; the role of public policy in promoting internal equilibrium (Full employment and price stability) and external balance (Equilibrium in the balance of payments).

**ECON 635 Public Finance (3)**

Pre-requisites: ECON 501

Public finance economics examines two key functions of government—taxation and expenditures. These government functions are evaluated based on efficiency and equity criteria. Topics including externalities, public goods, Social Security, Medicare and the personal income tax are examined.

**ECON 641 Labor Economics (3)**

Pre-requisites: ECN 501

Theory, forms and measurement of wages, hours, earnings and wage supplements.

**ECON 652 Macroeconomics (3)**

Pre-requisites: ECON 501

Comparative static analysis of the determination of income, employment, and the price level in various macroeconomic approaches. Analysis of fiscal, monetary, and income policy as tools for securing full employment and price stability.

**Finance Graduate Courses**

**FIN 600 Financial Management (3)**

Pre-requisites: ACCT 501 & ECON 501

In-depth studies of principles of corporate finance to develop the theoretical knowledge and practical judgment necessary for financial decision-making. The specific topics covered include, but are not limited to: the time value of money, valuation of financial assets, capital budgeting, market efficiency, risk and uncertainty, portfolio theory, the CAPM and APT models, capital structure, dividend policy, and option pricing theory.

**FIN-610, Investment Concepts (3)**

Pre-requisites: FIN 600

This course is a survey of equities, fixed income securities and derivatives, and the markets in which these securities trade. The focus is on understanding these instruments, and how they are used in mutual funds and other managed portfolios, so that students can make intelligent choices about how to save for retirement and other personal financial goals. This course cannot be used for credit towards the Master of Science in Finance degree or towards an MBA Finance Emphasis. Additionally, students who have already taken FIN-621 and/or FIN-638 are not eligible for this course.

**FIN 616 Equity Securities and Markets (3)**

Pre-requisites: FIN 600

Principles of investing in common stocks. Analysis of the stock markets and the mechanics of trading; principles of diversification, portfolio analysis and the relationship between risk and return; introduction to the valuation of common stocks. An examination of stock market efficiency, including an in-depth examination of value and growth investing and active versus passive investing. The focus of this course is on market efficiency and its relation to investment strategy, rather than security analysis. Based on an examination of recent finance research, students are challenged to develop their investment philosophy and to formulate a strategy to put their philosophy into practice.

**FIN 620 - Securities Analysis (3)**

Pre-requisites: FIN 600

This course explores the world of equities research and related stock selection. Students who successfully complete this course will be able to explain why it is difficult for the equities research analyst to select stocks that outperform relevant benchmarks, over time, and why, nonetheless, a given analyst's performance prospects are enhanced by dispassionate and exhaustive execution of a well-reasoned/value-added approach. Students will prepare a company analysis reflective of company and industry analysis and that also makes use of prospective valuation work in an historical context.

**FIN 621 Fixed Income Securities and Markets (3)**

Pre-requisites: FIN 600

Study of various fixed income securities and markets, including Treasuries, municipal securities, commercial papers, medium term notes, corporate bonds, mortgage-backed securities and interest rate derivatives. Focus on developing analytical and quantitative skills for valuation of fixed income securities and management of fixed income portfolios.

**FIN 622 Financial Institutions Management (3)**

Pre-requisites: FIN 600

Examination of operations, management, and regulations of modern financial institutions, including depository institutions, investment banks, and insurance companies. Focus on the understanding of risks faced by financial institutions' managers and the methods and markets through which these risks are managed.

**FIN 625 International Finance (3)**

Pre-requisites: FIN 600

Study of the international monetary environment and financial planning for corporations with overseas operations. Analysis of the effects of international financial planning on such factors as exchange rate fluctuations, currency restrictions and tax regulations. Examination of financial aspects of multinational business, including foreign investments, trade and transfer of funds.

**FIN 628 Real Estate Finance (3)**

Pre-requisites: FIN 600

Lecture and discussion series focusing on real estate concepts, practices, and institutions. Specific attention is given to legal aspects of real estate ownership, appraisal, market analysis, mortgage financing, analysis of

complex real estate projects and the financing and securitization thereof. Competence in financial evaluation techniques to include net present value and internal rate of return is assumed.

### **FIN 634 Financial Planning and Analysis (3)**

Pre-requisites: FIN 600 The course focuses on financial management for corporate value creation and on techniques of financial planning and analysis in an applied setting. Among other topics, case studies concern the role of financial administration in managing capital costs, capital budgeting, shareholder equity, corporate capital structure, and mergers and acquisitions.

### **FIN 635 Advanced Corporate Finance (3)**

Pre-requisites: FIN 600

Advanced study of concepts and techniques of financial management with an emphasis on long-term decisions in support of the firm's strategies. Topics include valuation, measurement of wealth creation, capital investment analysis, and cost of capital estimation, long-term financing decisions, and mergers. The global financial environment is emphasized. Case analysis is a frequently-used learning tool.

### **FIN 636 Private Equity and Venture Capital (3)**

Pre-requisites: FIN 600

The Private Equity/Venture Capital (PE/VC) course explores the forms and methods of equity investment in new and growing businesses. Private equity represents conventional investments, typically in established and growing businesses across a wide range of industries. Venture capital involves high-risk, high-potential-return investments, typically in technology based firms. Topics include the equity investment process, investment vehicles including conventional equity investment and venture capital, the creation of private placement memos, the evaluation of equity investment opportunities, and the structuring of investment groups and deal structure and negotiation.

### **FIN 638 Derivative Securities and Markets (3)**

Pre-requisites: FIN 600 and FIN 616

This course shows how financial managers can use capital markets technology to create value. It explores how derivatives can be used to manage financial risks and position firms to exploit strategic opportunities, reduce financing costs, and structure incentives. Students learn the mechanics of options, forwards, futures, and swaps, and then study uses of these instruments through a series of case studies.

## **ITM Graduate Courses**

### **ITM 598 Graduate Reading Course**

Pre-requisites: Permission of the department chair

### **ITM- 600 Managing Information Technology (3)**

This course will provide the student with a broad based understanding of the management of information technology in order to prepare the student to manage change as the technology is implemented in the organizational environment. It will also make the student aware of current technological issues and how they will impact his or her ability to manage.

### **ITM-605 Project Management**

This course provides students with the fundamental concepts of project management and experience applying these concepts. Topics covered will reflect the Project Management Institute's Book of Knowledge and encompass the project life cycle, including project quality, scope, time constraints, cost and budgeting, resource allocation, communication, teamwork and leadership, risk, procurement, and project management tools. Students will create deliverables such as a statement of work, work breakdown structure, project schedule, budget, and, risk management plan. The course format typically includes interactive discussion, case studies, in-class activities, and a small-scale simulation project. Students are encouraged to integrate current projects in their work place or volunteer activities into class activities and discussion to reinforce opportunities for practical application of course topics.

### **ITM 610 Systems Analysis and Design I (3)**

Pre-requisites: MIS 600 or permission of instructor

In this course, students will explore the various concepts, deliverable reports, and principles in the systems development life cycle (planning, analysis, design, and implementation) to gain an understanding of the scope of systems analysis and design in a business organization context. Students will learn about the roles and coordination efforts involved in systems development and the different methods, reports, tools, and techniques used in systems analysis

and design. Topics addressed may include feasibility study, analysis of information needs, specification of system requirements, design and development documentation, data modeling, process modeling, alternative analysis, prototyping, implementation, and evaluation of a project. Typically, students work in small teams to apply the theoretical concepts to a real life project and produce analysis and design deliverables.

### **ITM 625 E-Commerce Application Development (3)**

Pre-requisites: MIS 600 or permission of instructor

This course covers the basic approach to the principles of design and implementation for electronic commerce systems. Also covered are issues in project management, underlying technologies that enable electronic commerce at the firm and market levels, and issues of security. The intent of the course is to aid individuals preparing for positions that include membership on and management of electronic commerce development teams.

### **ITM 630 Database Management Systems (3)**

Pre-requisites: MIS 600 or permission of instructor

This course provides an overall understanding of database techniques, beginning with a study of the characteristics of relational database management systems and continuing with structured query language (SQL), entity-relationship diagrams, dependencies and normalization, and multi user systems. Evolving approaches to database management, such as object-oriented databases, will also be examined. Projects will require the student to develop a database design from the analysis stages to the final implementation by utilizing various design tools and a major DBMS package such as Oracle.

### **ITM 635 Data Communications & Networking**

Pre-requisites: MIS 600 or permission of instructor

This course looks at the types of information used in the business environment and the implications in terms of communications along with the trend toward digital integration of historically stand alone analog and digital technologies. It examines the process of converting voice, data, image, and video information into integrated electromagnetic signals for transmission via various media. Coverage includes communications techniques, transmission efficiency methods, wide area networks (WANs), local area networks (LANs), high-speed trends in networking, and communications architectures and subsequent internetworking issues.

## **International Business Graduate Courses**

### **IB 501 Business Economics (2)**

Pre-requisites: EMIB program

This is an introductory course in economics designed to introduce participants to basic economic concepts and the application of these concepts to various business situations. The first half of the course is spent studying the tools of competitive analysis while the second half allows application of the tools to formulate and implement competitive strategy.

### **IB 505 Financial and Managerial Accounting Methods (2)**

Pre-requisites: EMIB program

An overview of the language of business, this course examines the concepts, current standards and problems related to financial accounting and reporting by U.S. enterprises. Serving as an accounting introduction for EMIB students without accounting experience and as review for those with prior experience, the course provides the foundation for subsequent examination of accounting issues of multinational enterprises.

### **IB 511 Financial Management Skills (2)**

Pre-requisites: EMIB program

This course provides basic financial tools necessary to understand foreign operations, including financial statement analysis, impact of foreign exchange rates and evaluation of performance in overseas markets.

### **IB 514 International Business Environment (2)**

Pre-requisites: EMIB program

This course seeks to develop an understanding of the international business environment and the issues that have to be addressed by business corporations when they operate across countries. It will discuss the role of various international organizations, including the WTO, IMF, World Bank, APEC and ASEAN in shaping global competition.

### **IB 515 Management Skills (2)**

Pre-requisites: EMIB program

Different cultures require different approaches. This course examines the management principles required to administer operations in international markets. Topics include motivation methods, organizational structures and leadership styles.

#### **IB 521 Marketing Skills (2)**

Pre-requisites: EMIB program

Marketing must be approached differently in many parts of the world due to cultural and business norms. This course reviews basic marketing approaches and how they must be modified in differing country environments. Topics include applicability of market research, customer preference, pricing and promotion.

#### **IB 525 International Trade Policy (2)**

Pre-requisites: EMIB program

This course investigates the effects of international trade and investment policy on firms, industries and the economy with emphasis on various regions throughout the world. The course will discuss tariffs, non-tariff barriers, trading blocs, international investment and industrial policies in various countries' economies.

#### **IB 531 International Business Strategies (2)**

Pre-requisites: EMIB program

This course focuses on the implementation of the traditional management functions (staffing, organizing, directing, and controlling) within an international or global organization. Emphasis will be placed on the impact of international environments (differing legal restrictions, political forces, economic situations, roles of labor, cultural philosophies, etc.) on management practices. A major underlying theme throughout the course will be the financial and efficiency costs of adjusting to local requirements versus global rationalization.

#### **IB 533 Asian Business in Global Markets (3)**

Analysis of Asian global business issues including strategies, foreign investments, human resource management, and marketing. The class will be supplemented with case studies on particular companies and countries. Asian businesses will be compared to multinational corporations in the United States, Europe, and Latin America

#### **IB 535 International Marketing Strategy (2)**

Pre-requisites: EMIB program The focus of the course is on the scope of global marketing and the various factors that influence and shape it. This will include analysis and discussion of issues related to globalization, market entry and development, global branding, and the global marketing mix elements of product, pricing, distribution, and communications.

#### **IB 541 International Financial Strategies (2)**

Pre-requisites: EMIB program

This course undertakes an analysis of strategies used in international financial management. Topics include international cash management, foreign exchange risk management, working capital, foreign direct investment and financing alternatives for multinational firms.

#### **IB 543 International Negotiations (2)**

Pre-requisites: EMIB program

Basic negotiation techniques are addressed with emphasis on effectively negotiating within the context of different cultures. Western and Eastern negotiation styles will be compared and contrasted. Other course subjects include high versus low content language, relationship versus transaction-based negotiation and time orientation.

#### **IB 545 Accounting Problems of Multinational Enterprises (2)**

Pre-requisites: EMIB program

A multidimensional examination of the accounting problems of multinational enterprises is undertaken through this course. International firms are faced with unique accounting problems in addition to the problems associated with strictly domestic operations. Among the problem areas covered are: differences in accounting standards, currencies, price levels, performance valuations, reporting practices and taxation.

#### **IB 551 Asia-Pacific Business Country Cases (2)**

Pre-requisites: EMIB program

This course provides an applied study of business and economic environments of East Asia using country cases as examples. Countries of focus include Japan, China, Korea, Taiwan and Indonesia.

#### **IB 555 European Business Country Cases (2)**

Pre-requisites: EMIB program

This course provides an applied study of business and economic environments of Western Europe using country cases as examples. Countries of focus include members of the European Union.

#### **IB 561 Latin American Business Country Cases (2)**

Pre-requisites: EMIB program

This course provides an applied study of business and economic environments of Latin America using country cases as examples. Countries of focus include Argentina, Brazil, Chile, Colombia, Mexico and Venezuela.

#### **IB 562 International Marketing Research and Analysis (2)**

Pre-requisites: EMIB program

Effective marketing management is based on good decision-making, which in turn is dependent on relevant and timely information—information that must be drawn from data. A key challenge facing managers is how to best convert data into useful information in a cost-effective and time-efficient manner. In this regard, we will attempt to understand some of the state-of-the-art computer modeling techniques, and learn to apply them in real-world business situations. Besides the tools and techniques, we will also focus on a variety of issues that affect data procurement and analysis.

#### **IB 565 Political and Cultural Environment of Europe (2)**

Pre-requisites: EMIB program. This course undertakes a survey of the political and social development of post-World War II Western Europe. Topics include politico-historical case studies, the rise and future of the European Union and European international relations.

#### **IB 566 Political and Cultural Environment of Latin America (2)**

Pre-requisites: EMIB program

This course provides a survey of the political and social development of 20th century Latin America. The focus is on the heterogeneity of the political experience. Countries of study include Argentina, Brazil, Chile, Colombia, Mexico and Venezuela.

#### **IB 567 Political and Cultural Environment of Asia-Pacific (2)**

Pre-requisites: EMIB program

This course focuses on the political and social development of post-World War II East Asia. Countries of study include Japan, China, Korea, Taiwan and Indonesia.

#### **IB 568 Managing Cultural Differences (2)**

Pre-requisites: EMIB program

Discussing different cultures, this course examines the extent to which culture affects perceptions, decisions and behavior as to how to approach management of cultural differences to achieve organizational effectiveness. Major topics include approaches to managing a culturally diverse workforce or team, ethics versus custom, culture and gender and non-Western style work days and weeks. Additionally, the course addresses expatriates, culture shock, repatriation and preparation for overseas travel and assignments.

#### **IB 569 International Organizations (2)**

Pre-requisites: EMIB program

The course surveys the history, organization and contemporary mission of international political and economic bodies. Organizations covered include the IMF and the World Bank, GATT, OECD, UN, European Union, OAS, ASEAN and others.

#### **IB 591 Study Abroad & Final Thesis Project (2)**

Pre-requisites: EMIB program

The study abroad occurs over a two-week period during the summer months. Pre-trip country/city/company papers are produced by the student teams. Upon return, the teams summarize their learning and present an overview. All students complete a final thesis project paper to conclude the EMIB degree program. It ties together the two-year curriculum and allows application of the business practice, culture and strategy knowledge received through the coursework, faculty and cohort group.

#### **IB 596 Study Abroad (3)**

The objective of this course is to allow students to apply the key concepts of global environments to a regional economy. The course combines case discussions with guest lectures by local business executives and scholars, and

company visits. Students are expected to have a practical knowledge of the complexity of the business environments of the region.

### **IB 600 Global Business Environment (3)**

This course examines international business issues faced by corporations operating across several countries and different external environments. The focus is, therefore, on the regional and global business environment of international firms, integrating trading, investing, cultural and business practices.

### **IB 642 Global Environment Strategy (3)**

This course focuses on strategic planning, implementation, and evaluation of management decision making within an international organization. Strategy is multidisciplinary by design and as such will draw on the student's experience and understanding of the functions of business and the forces that impact the business success. It combines a range of viewpoints and analytical techniques. The course will address the challenges involved in understanding the shifting dynamics and multifaceted phenomena that confronts global business.

### **IB 680 Theory in International Business (Doctoral Seminar) (3)**

Pre-requisites: Ph.D. program

Leading economic, strategic and behavioral theories of the determinants of foreign direct investment and the multinational enterprise that have emerged over the past forty years. Special emphasis is given to the interface between the competitive advantages of firms and comparative advantages of countries in shaping different kinds and forms of foreign production in various sectors and nations.

### **IB 682 Seminar in Global and Regional Business (Doctoral Seminar) (3)**

Pre-requisites: Ph.D. program

The history and role of specific geographic regions in the global economy, current theory related to international business, multinational companies, and government policies that affect international business.

### **IB 695 Special Study for Examinations (0)**

Pre-requisites: Permission of the department chair

### **IB 697 Research Topics (1-3)**

Pre-requisites: Permission of the department chair

### **IB 698 Graduate Reading Course (1-3)**

Pre-requisites: Permission of the department chair

### **IB 699 Dissertation Research (0-6)**

Pre-requisites: Permission of the department chair

### **IB 6CR-99 Doctor of Philosophy Degree Study (0)**

Pre-requisites: Permission of the department chair

## **Management Graduate Courses**

### **MGT 600 Management (3)**

This course addresses a set of skills grounded in behavioral science theory and research that are essential for a successful career in management. It will integrate the management principles of planning, organizing, leading, and controlling with the skills necessary to accomplish these principles with people.

### **MGT 603 - Legal, Ethical, Professional Environment of Business (3)**

This course is directed at complex decision-making, requiring recognition and integration of legal, ethical and professional considerations in managing the socially responsible organization. It provides an overview of the relationship of the business organization to the legal system, including various modes of dispute resolution. In addition, the course addresses areas of legal risk and responsibility, encompassing how business is affected by, and interacts with, state and federal laws and regulations.

### **MGT 605 Strategy (3)**

Pre-requisites: MGT 600

Formulating, implementing, and evaluating cross-functional decisions that enable an organization to achieve its objectives. Includes the determination of product-market scope, the intensity of business investment, functional area strategies, and operational assets and skills to be employed. Multiple business unit analysis includes strategies directed at resource allocation across units and the effective creation of synergy.

### **MGT 606 Strategy & Practice (3)**

Pre-requisites: Capstone(last semester)

A capstone for the Part-time MBA program that emphasizes strategic evaluation and cross-functional and team-based experiential learning. Designed around the elements of a "live" strategic issue presented by a client-company/organization and addressed by student teams. The component parts typically include management and human resource issues, marketing, finance, and operations management. Builds student skills in integrating knowledge from various functional areas in the business arena and applies those skills to complex business/organization problems and strategic issues arising out of changing technology, competitive market conditions, social and cultural changes, and government actions in both the domestic and global arenas.

### **MGT 610 Management of Human Resources (3)**

Pre-requisites: MGT 600

Current topics and problems of human resources and personnel practices. Course objectives consist of investigation and discussion of selected topics in recruiting, utilization, conservation, and development of human resources within the context of the individual firm and the labor market.

### **MGT 614 Executive Decision-Making (3)**

Pre-requisites: MGT 600

Oriented toward giving the student insight into the decision-making process in management. The nature of managerial decision-making, the environment for decision-making and the philosophy and selected techniques for decision-making offered modern managers by the management sciences are considered.

### **MGT 615 Current Issues in Management (3)**

Pre-requisites: MGT 600

Comprehensive in-depth analysis of current management problems and issues. Focus of the course will be contemporary topics facing the executive in today's organization and society.

### **MGT 620 New Venture Initiation (3)**

Prerequisites: MGT 600

Addresses the problems of starting a new service or manufacturing business. Includes entrepreneurship, characteristics of new ventures, raising capital and preparing business proposals.

### **MGT 621 Advanced Business Planning for New Ventures**

Prerequisites: MGT 620 Provides in-depth involvement in the development and presentation of a professional business plan. Topics include competitive analysis, strategic and managerial analyses, securing start-up financing, and professional presentation methods. Selected guest lecturers will include entrepreneurs and entrepreneurship experts from the region.

### **MGT 622 Family Business (3)**

Prerequisites: MGT 620

Focuses on the unique challenges facing family business: succession planning, managing change and development, managing role demands and conflicts at the family/firm interface. Students learn fundamental issues facing family firms through readings, lectures by experts, and presentations by members of local family businesses.

### **MGT 623 Corporate Entrepreneurship (3)**

Pre-requisite: MGT 600. This course focuses on the corporate venturing process, which leverages the processes of internal entrepreneurship, working with universities and licensing new technology to promote the continued growth and learning of the organization. Topics include the strategic analysis of growth and innovation opportunities of the firm, reviewing the forms of corporate venturing (new markets, new products, commercialization, M&A, restructuring, etc.), and developing the skills of structuring and managing business innovations in complex existing systems in a manner which is exploratory, integrative, fast-paced, and resource-conscious.

### **MGT 624 Special Topics in Entrepreneurship**

Pre-requisite: MGT 600

Designed to bring emerging and varying entrepreneurial business issues and practices before graduate business students so that they may begin to better recognize, create, and capitalize on evolving business opportunities. Guest speakers and readings are supplemented with cases and projects involving "real and live" entrepreneurial topics for examination of various issues in innovative business planning, corporate ventures, business growth, venture capital, emerging technologies; and other areas of entrepreneurial concern.

Course study is intended to emphasize cross functional analysis of rapidly changing business environments to enable identification of entrepreneurial opportunities and the creation and successful management of innovative operations.

### **MGT 628 Legal and Ethical Environment (3)**

Today's managers confront complex decisions that require recognition and integration of legal and ethical considerations in managing the socially responsible organization. This course addresses and integrates these issues, engaging students in developing an understanding of legal issues and the legal system, exploring frameworks through which to approach ethical dilemmas, and applying these concepts in the business context.

### **MGT 635 Management of Change (3)**

Pre-requisites: MGT 600

Discovery and discussion of change in relation to the complexities of organizational life. In attempting to fulfill this goal, this class takes both theoretical and practical approaches as it seeks to meet both the academic and applied aims of most business and management courses.

## **Marketing Graduate Courses**

### **MKT 505 Marketing for Public & Non-Profit Organizations (3)**

Pre-requisites: Permission of instructor

Marketing concepts and methods applied to the management of public and non-profit organizations. Analysis of products and services, delivery systems, promotional activities, and pricing.

### **MKT 560 Executive in Residence (1-3)**

Pre-requisites: Permission of department chair

A course offered to selected graduate or professional students by a regionally or nationally distinguished executive in the field of marketing.

### **MKT 600 Marketing Management (3)**

Business problem-solving and decision-making to formulate an effective marketing program. Emphasis of marketing management process includes: situation assessment; strategy formulation; marketing planning; organizing and budgeting; marketing implementation; and marketing performance assessment.

### **MKT 605 Seminar in Current Marketing Issues (3)**

Pre-requisites: MKT 600 or permission of instructor

Topics of current interest to the development of marketing theory and practice, e.g., brand management, ethics, services, regulation, environmental impact, etc.

### **MKT 610 Sales Management (3)**

Pre-requisites: MKT 600 or permission of instructor

An examination of the strategic principles that guide the hiring, development, and evaluation of a sales force. Includes the analysis of sales operations, time and territory management, and quantitative techniques for forecasting sales and evaluating sales productivity. Utilizes case studies, lecture, and quantitative analysis.

### **MKT 612 Marketing and Electronic Commerce (3)**

Pre-requisites: MKT 600

Concepts and best practices relating to marketing and electronic commerce. Focuses on evolving business models, lifetime value, consumer behavior, marketing strategy, and multi-channel integration. Course format consists of a combination of lecture/discussion, guest speakers, in-class assignments and case analyses, and student project presentations and reports.

### **MKT 615 New Product Management (3)**

Pre-requisites: MKT 600 & DSCI 502

Development and marketing of new products/services. Examines skills in interpreting market research, idea generation, physical product design, image building, product mix selection, test marketing, monitoring, and refining the product and mix during transition from test market to national launch. Steps in opportunity identification, design, testing and launching are stressed.

### **MKT 620 Consumer Analysis and Buyer Behavior (3)**

Pre-requisites: MKT 600

Concepts and constructs used to identify, measure, and target consumer market segments. Theories explaining attitude formation, decision-making, and purchase behavior. Development of applied marketing strategies.

### **MKT 625 International Marketing (3)**

Pre-requisites: MKT 600

Analysis of economic, cultural, political, and competitive factors affecting firms in global markets. Role of global marketing planning and strategy in overall firm growth and survival. And study of marketing in major trading blocs and developing markets.

### **MKT 626 Environmental & Marketing Implications (3)**

Analysis of local, national and global environmental concerns. Focus is on learning how to develop environmentally responsible marketing programs in light of environmental issues.

### **MKT 630 Advertising Management (3)**

Pre-requisites: MKT 600

Stimulation of primary demand and selective demand; building successful advertising campaigns; budget management; effectiveness of advertising as a form of communication and selling; client-agency relations; social aspects; and emphasis on national advertisers of consumer and industrial goods.

### **MKT 635 Business Marketing Management (3)**

Pre-requisites: MKT 600

Examination of issues related to the marketing of products and services from one business to another. Topics include analysis of the buying center, understanding the buyer's purchasing operation, relationship marketing, and marketing mix strategies for the business-to-business environment. Students will work in teams to analyze cases and short project assignments.

### **MKT 640 Management of Marketing Research (3)**

Pre-requisites: MKT 600 & DSCI 502 or permission of instructor. A study of how firms obtain information which is used to identify marketing opportunities and to measure customer wants and needs. Emphasis is on survey methods and includes: research problem formulation; how to design a questionnaire; what is an attitude and how to measure it; what is a good sample; the fundamentals of data analysis; and how to measure customer satisfaction.

### **MKT 646 Strategic Marketing (3)**

Pre-requisites: MKT 600 and/or permission of instructor

A study of how firms gain competitive advantage by creating customer value in a dynamic environment. Topics include: the strategic process; competitive analysis; becoming a cost leader; making quality a strategic weapon; customer value analysis; and global positioning. Students will undertake a group project to analyze a firm's competitive market strategy and value positioning, and will recommend alternative approaches.

### **MKT 682 Seminar in Marketing Theory (Doctoral Seminar) (3)**

Pre-requisites: Ph.D. program

Philosophies of marketing theory, the nature of scientific inquiry, the nature of marketing data, and various approaches to data collection.

### **MKT 683 Seminar in International/Global Marketing (Doctoral Seminar) (3)**

Pre-requisites: Ph.D. program

Review and analysis of the resources and objectives required to maximize international and global marketing opportunities. Special emphasis on the interplay of driving and restraining forces in global market initiatives. Ethnocentric, polycentric, regiocentric, and geocentric management orientation are presented.

### **MKT 695 Special Study for Examinations (0)**

Pre-requisites: Permission of the department chair

### **MKT 697 Research Topics (1-3)**

Pre-requisites: Permission of the department chair

### **MKT 698 Graduate Reading Course (1-3)**

Pre-requisites: Permission of the department chair

### **MKT 699 Dissertation Research (0-6)**

Pre-requisites: Permission of the department chair

### **MKT-6CR-99 Doctor of Philosophy Degree Study (0)**

Pre-requisites: Permission of the department chair

## Master of Business Administration Graduate Courses

### MBA 621 Information Technology (1)

This course focuses on the management of information technology in organizations. Foundational concepts regarding information technologies will be covered. These foundational concepts include: (1) enterprise software; (2) information technology supported business process design; (3) managing information systems in the service management context and as a value creating asset; (4) data management, database management systems and data warehousing; (5) business intelligence and decision making models; (6) e-commerce and (7) emerging technologies.

### MBA 622 Operations Management (2)

The objectives of this course are: (1) to familiarize the student with decision-making tools and models that operational managers use; (2) to present business firms' integrated operational practices in manufacturing and service sectors; and (3) to analyze and examine business strategic process planning from a cross-functional perspective using short case studies. Topics will include: facility capacity and location decisions, scheduling and control problems, aggregate planning, inventory systems, and project management and control.

### MBA 623 Supply Chain Management (1)

### MBA 624 Managerial Economics and Applied Statistics (2)

The course will focus on developing the tools of economic reasoning and statistical analysis necessary to make sound managerial decisions. Towards that goal, economic and statistical analysis as they pertain to markets, firms, and competition among firms will be developed. The use of applied empirical models for economic and statistical analysis and managerial decisions will be explored.

### MBA 625 Essentials of Marketing Strategy (2)

This course is an introduction to the fundamentals of contemporary marketing management, with a particular focus on the strategic foundations of marketing. The overall goal of the course is for students to understand the role of marketing and brand development in driving sales and profitability for firms. Product differentiation, segmentation, positioning, target audience development and their inter-relationships will be emphasized. Additionally, students will gain competency in developing effective brand architectures.

### MBA 626 Legal and Ethical Environment (2)

This course examines the legal and ethical issues that business managers confront. The course provides an overview of the relationship of the business organization to the legal system, including various modes of dispute resolution. In addition, the course addresses areas of legal risk and responsibility, encompassing how business is affected by, and interacts with, state and federal laws and regulation. Case studies are employed in the course to challenge students to consider how legal and ethical judgments are implemented in practical and effective ways.

### MBA 627 - Leadership and Strategic Management (2)

Businesses have undergone enormous changes in recent years, requiring leaders and teams to learn rapidly and adapt quickly, focusing on horizontal and vertical leadership, team building and performance, and team leadership. This course introduces students to strategic management and leadership concepts, models and theories developed to optimize organizational effectiveness in challenging work environments. The course presents opportunities for students to explore issues central to an enterprise's long- and short-term competitive position.

### MBA 628 Integrated Decision Making (2)

The primary goal of this course is to coalesce previous course material in such a way that students will view business as an integrated whole rather than a set of isolated decisions. Another important goal of the course is to help students develop the analytical thinking skills necessary to make effective decisions in complex, uncertain environments. The format of the course is a series of team-taught weekly cases and simulations. Students will be asked to prepare and present the results of their analysis on a weekly basis.

### MBA 630 Applied Statistics (3)

Data analysis is an everyday reality of the business world. This course challenges students to think about business problems in a systematic fashion by reviewing mathematical concepts and developing statistical thinking skills. Statistical thinking can lead to both a better understanding of the problem and

can result in higher quality solution options. The course provides coverage of the widely used statistical methods to aid in problem formulation, data analysis and managerial decision-making. At the end of this course, students will have a more sophisticated understanding of the mathematics that underlie probability and statistical concepts, issues involving data interpretation, and decision-making under conditions of uncertainty. This course also serves as a prerequisite for other analytical coursework in the MBA curriculum.

### MBA 631 Legal Aspects of Business (1)

Overview of the U.S. legal system and specific areas of law such as contracts, torts (including product liability), agency, selection of business entity, corporate governance, and intellectual property.

### MBA 632 Financial Accounting (1)

Financial Accounting presents accounting as an information system that produces summary financial statements, primarily for users external to a business or other enterprise. Students study the forms of business organization and the common transactions entered into by businesses. The emphasis is on understanding and applying basic accounting principles and other concepts that guide the reporting of the effect of transactions and other economic events on the financial condition and operating results of a business. How to analyze and interpret historical financial statements, as well, as the limitations of using these in making forward-looking business decisions is included. The primary content emphasis will be the basic accounting cycle and the four major financial statements: income statement, balance sheet, retained earnings and cash flow. We will also learn about financial statement analysis.

### MBA 633 Managerial Economics (2)

This course will introduce you to the core ideas and economic tools that are used for analysis of markets and of firms that produce and sell goods and services in these markets. Using simple economic models designed to simulate markets; this course will explore tools and analytical techniques that can be used to study real markets. The first section of the course will focus on competitive markets and the short and long run decision made by firms that operate within competitive markets. The latter part of the course will focus on strategic interaction between firms in markets in which firms exercise some degree of monopoly power.

### MBA 634 Nexus I (1)

This three-part course provides integration and professional development throughout the year. There are four focus areas in Nexus: Interlinking the MBA Curriculum, Career Management, Managerial Communication, and Business Connections. Interlinking the MBA Curriculum includes reflection, a research project on a pre-specified company, and a set of current topics presented by speakers. Career Management includes class sessions and seminars on key aspects of career development, including career, industry and company exploration; and job search strategy and skill development. Activities include networking and informational events, mock interviews with MBA-level recruiters, and a business etiquette lunch. Managerial Communication provides methods to enhance skills in written and oral communication, through writing and presenting an idea paper and creating an ePortfolio. Business connections provide opportunities to learn from business leaders, faculty and other academic experts on relevant business topics. In addition, students build their personal networks by participating in a variety of programs and events.

### MBA 636 Finance (3)

This course provides in-depth studies of principles of corporate finance to develop the theoretical knowledge and practical judgment necessary for financial decision-making. The specific topics covered include, but are not limited to, the time value of money, valuation of financial assets, capital budgeting, market efficiency, risk and uncertainty, portfolio theory, the CAPM and APT models, capital structure, dividend policy, and option pricing theory.

### MBA 637 Ethical Environment of Business (1)

Special emphasis in this course is given to the analysis of ethical issues that business managers confront. A complementary objective is to focus on the implementation of ethical judgments and to formulate appropriate strategies for addressing barriers to such implementation. Throughout the course, however, the connection between reflection and action will be our chief concern. Existing norms for business practice will be studied and examined as they represent important guidelines for decision-making, but students will also be challenged to consider their adequacy, applicability, and appropriateness in various contexts. The course will consist of two broad elements. One



component takes up the conceptual and theoretical foundations of business ethics. Readings, tools and perspectives will be drawn from various sources: moral philosophy, business history, economics, religion, and other disciplines. The focus in this section is on ethical analysis and moral reasoning. The second component, representing a serious effort to simulate actual ethical decision making and implementation of those decisions, is based on case study and discussion. Cases cover various functional emphases as well as highlighting the multiple roles and responsibilities that fall to business men and women. The cases portray in a realistic fashion how different but interrelated ethics issues unfold and how these dilemmas frequently resist simple classification or easy resolution.

#### **MBA 638 Managerial Accounting (1)**

This course introduces students to the fundamentals of management accounting. The emphasis is on the use of accounting information to satisfy specific management objectives. After taking this course, students will understand the three broad objectives of a management accounting information system: to provide information for costing out services, products, and other objects of interest to management; to provide information for planning, controlling, evaluation and continuous improvement; and to provide information for decision making.

#### **MBA 640 Prof Effectiveness Series II (2)**

This three-part series provides professional development throughout the year. There are three focus areas: career management, managerial communication, and business connections. Career management includes all aspects of career plan development and execution, including gaining practical experience and completing a successful job search. Managerial communication provides methods to enhance skills in intra/interpersonal communication, small group facilitation, large group presentation, and strategic communication. Business connections provide opportunities to learn from business leaders, faculty and other academic experts on current and emerging business topics. In addition, students build their personal networks by participating in a variety of programs and events.

#### **MBA 641 Global Business Integration I (2)**

All business, whether domestic or multinational, are directly or indirectly affected by global business environments - imports, exports, foreign direct investment, foreign currency, outsourcing, and service agreements. This course offers a broad examination of how these factors impact the operation of international business from the view points of political, economic, financial, cultural, legal, and business practices.

#### **MBA 642 - Data and Decisions (3)**

#### **MBA 643 - Governance/Compliance/Strategy (3)**

#### **MBA 644 - Nexus II (1)**

This three-part course provides integration and professional development throughout the year. There are four focus areas in Nexus: Interlinking the MBA Curriculum, Career Management, Managerial Communication, and Business Connections. Interlinking the MBA Curriculum includes reflection, a research project on a pre-specified company, and a set of current topics presented by speakers. Career Management includes class sessions and seminars on key aspects of career development, including career, industry and company exploration; and job search strategy and skill development. Activities include networking and informational events, mock interviews with MBA-level recruiters and a business etiquette lunch. Managerial Communication provides methods to enhance skills in written and oral communication, through writing and presenting an idea paper and creating an ePortfolio. Business Connections provides opportunities to learn from business leaders, faculty and other academic experts on relevant business topics. In addition, students build their personal networks by participating in a variety of programs and events.

#### **MBA 651 Study Abroad (3)**

The objective of this course is to allow students to apply the key concepts of global environments to a regional economy. The course combines case discussions with guest lectures by local business executives and scholars, and company visits. Students are expected to have a practical knowledge of the complexity of the business environments of the region.

#### **MBA 653 Integrated Consulting Module (3)**

This course emphasizes cross-functional learning and team-based, experiential learning. Designed around the elements of a strategic plan, and specific issues

identified by a "real world" client-company, a team teaching format is utilized, involving a "live-case" approach. Senior-level managers from a company will present an existing strategic problem to be addressed by student teams.

#### **MBA 654 Nexus III (1)**

This three-part course provides integration and professional development throughout the year. There are four focus areas in Nexus: Interlinking the MBA Curriculum, Career Management, Managerial Communication, and Business Connections. Interlinking the MBA Curriculum includes reflection, a research project on a pre-specified company, and a set of current topics presented by speakers. Career Management includes class sessions and seminars on key aspects of career development, including career, industry and company, exploration; and job search strategy and skill development. Activities include networking and informational events, mock interviews with MBA-level recruiters and a business etiquette lunch. Managerial communication provides methods to enhance skills in written and oral communication, through writing and presenting an idea paper and creating an ePortfolio. Business Connections provides opportunities to learn from business leaders, faculty and other academic experts on relevant business topics. In addition, students build their personal networks by participating in a variety of programs and events.

## School of Law

**Annette E. Clark, M.D., J.D.,**

*Dean and Professor of Law*

**Michael J. Kolnik, J.D.,**

*Assistant Dean and Director of Admissions*

As a Jesuit institution founded in 1843, Saint Louis University School of Law (SLU LAW) strives to foster an environment of academic excellence and a commitment to public service and professionalism. With an accomplished faculty and a diverse curriculum designed to prepare students for all areas of legal practice, the School offers an ideal environment for those committed to succeeding. Through its Center for Health Law Studies, the School also offers the premier health law program in the nation, along with specialized Centers in Employment Law, International and Comparative Law, and Interdisciplinary Law. Whatever the interest - corporate, criminal, employment, finance, health, international, intellectual property, public service, tax, real estate, or litigation - the School can help students achieve their desired career goals. [Click here](#) for comprehensive information about our different concentrations.

SLU LAW offers both full-time day and part-time evening programs. Students are presented with a variety of opportunities for experiential education. [Professional skills programs](#) are available to all students after the first year of studies. Students have a range of options from simulated arguments before the Supreme Court to contract drafting to participating in a legal clinic. The [Legal Clinics](#) allow students, under supervision from trained faculty, to represent clients in need at court, and by clerking for and participating in externships at corporations and government agencies.

In the spirit of the Jesuit tradition of "men and women for others," the School focuses on the obligation to public service as part of the legal profession. Public service projects begin at orientation and opportunities continue throughout the program.

For more information, visit [SLU LAW's web site](#) or contact the Admissions Office through [email](#) or phone at 314.977.2800.

### Application requirements for the J.D. degree:

- Bachelor's degree from an accredited college or university or the completion of the equivalent of six semesters with expected date of graduation to take place during the current academic year.
- Registration for the Law School Admission Test (LSAT), the LSAC Credential Assembly Service (CAS) and the LSAC Letter of Recommendation Service (LOR). No application is complete without test scores and transcript analysis from LSAC's CAS. We do accept evaluation forms through the LSAC Evaluations Service but they are not required.
- SLU LAW highly recommends that applicants take the LSAT in the summer or fall prior to the year they wish to enter law school. SLU LAW will only consider LSAT scores earned within the last three years.
- All undergraduate and graduate transcripts must be forwarded directly to the CAS. SLU LAW will request the LSAC CAS Report upon receipt of the application.
- **Important:** It is the responsibility of each applicant to provide the Admissions Office with all the necessary documents. The applicant is encouraged to contact the Admissions Office throughout the admissions process to confirm receipt of application materials at [admissions@law.slu.edu](mailto:admissions@law.slu.edu) or by phone at (314) 977-2800. Incomplete applications will not be reviewed. [Click here](#) for more information or to apply online.

### **Dual Degree Programs**

SLU LAW also offers [dual degree programs](#) in partnership with several schools within the University. Dual degree programs are designed to allow students to obtain two degrees in significantly less time (4-5 years, depending upon the degree) than if the degrees were obtained separately.

The dual degree student must meet the admissions criteria for both the School of Law and the school from which the doctoral or master's degree is sought. Application for both should be made either at the same time or during the student's first year of enrollment in the School of Law. Dual Degree Students are required to complete a minimum of 82 hours in the School of Law.

The School of Law has established dual degree programs with the graduate programs outlined below. In addition, the School of Law will consider fashioning a dual degree program to meet individual student interest.

- [Juris Doctor and Master of Accounting](#)
- [Juris Doctor and Master of Arts in Law and Sociology & Criminal Justice](#)
- [Juris Doctor and Master of Arts in Public Administration](#)
- [Juris Doctor and Master of Arts in Urban Affairs](#)
- [Juris Doctor and Master of Business Administration](#)
- [Juris Doctor and Master of Health Administration](#)
- [Juris Doctor and Masters of Public Health](#)
- [Juris Doctor and Masters of Public Health - Health Policy](#)
- [Juris Doctor and Doctorate in Health Care Ethics](#)

### **LLM Programs**

For those already possessing a law degree, SLU LAW offers two [Masters of Laws \(LLM\) programs](#). The Center for Health Law Studies offers the [LLM in Health Law](#). For those holding a degree of law from a foreign country, the [LLM in American Law for Foreign Lawyers](#) program offers opportunities to study the American legal system.

### **Course Listing**

[Click here](#) for SLU Law's complete academic curriculum and program requirements.