



UM-St. Louis
BULLETIN

2006-07

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Instructional Areas

Many departments offer courses in several subject areas.
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Accounting
Adult Education
Africana Studies
American Studies
Animal Behavior
Anthropology
Applied Mathematics
Applied Music
Arabic
Archaeology
Art Education
Art History
Arts Management
Astrophysics
Astronomy
Athletic Coaching
Atmospheric Science
Behavioral Neuroscience
Biochemistry
Biology
Biotechnology
Black Studies
Business Administration
Cellular Biology
Ceramics
Chemistry
Chinese
Classical Studies
Clinical Psychology
Communication
Community Education
Comparative Politics
Computer Science
Conservation Biology
Counselor Education
Creative Writing
Criminology Criminal Justice
Dance
Developmental Biology
Drawing
Early Childhood Education
East Asian studies
Ecology
Economics
Educational Administration
Educational Foundations
Educational Psychology
Educational Research and Evaluation Methods
Educational Technology
Elementary Education
Employee Training and Development
Engineering (Civil, Electrical, Mechanical)
English

English as a Second Language
Entomology
Ensemble Performance
Environmental Biology
Ethics Evolution Biology
Evaluation and Assessment in Education
Exercise Science Education
European Studies
Fine Arts
Finance
French
Forensic Economics
Genetics
Geology
German
Gerontology
Graphic Design
Greek (Modern and Ancient)
History
Higher Education
Human Biology
Human Physiology & Anatomy
Human Resource Management
Industrial/Organizational Psychology
Information Systems
Institutional Research
Interdisciplinary Studies
International Business
International Relations
International Studies
Invertebrate Biology
Japanese
Jazz Studies
Labor Studies
Latin
Latin American Studies
Legal Studies
Literature
Logistics and Operations Management
Logistics and Supply Chain Management
Management
Marine Science
Marketing
Mass Communication
Mathematics
Media Studies
Medical Physics
Microbiology
Middle School Education
Molecular Biology
Music
Music Education
Museum Studies
Neuroscience
Nonprofit Organization Management and Leadership
Nursing
Optometry
Ornithology
Painting

Philosophy
Photographic Studies
Physical Education
Physics
Physiological Optics
Political Science
Pre-Architecture
Pre-Dental
Pre-Engineering
Pre-Health Sciences
Pre-Journalism
Pre-Law
Pre-Medicine
Pre-Optometry
Pre-Pharmacy
Pre-Veterinary
Printmaking
Probability and Statistics
Professional Education
Psychology
Public Policy Administration
Public Affairs Journalism
Public Law
Radio and Television
Religious Studies
Reserve Officer Training Corps
Secondary Education
School Psychology
Social Work
Sociology
Spanish
Special Education
Sculpture
Statistics
Studio Art
Systematic Biology
Teacher Education
Technical Writing
Theatre
Trauma Studies
Tropical Biology and Conservation
Tropical Ecology
Urban Politics
Urban Studies
Vertebrate Biology
Wildlife Ecology
Women's and Gender Studies
Writing




Preface

This *Bulletin* includes a description of undergraduate and graduate programs at the University of Missouri-St. Louis. All statements in this publication concerning regulations, fees, curricula, or other matters are subject to change without notice. They are not to be regarded as offers to contract.

The University of Missouri-St. Louis is accredited by the Higher Learning Commission of the North Central Association. This accreditation applies to all baccalaureate, masters, and doctoral levels.


The policies of the University of Missouri-St. Louis comply with the provisions under those laws which forbid discrimination on the basis of race, color, sex, national origin, religion, sexual orientation, age, handicap, or veteran status in any program or activity of the university.

Demographic data are obtained by the University in order to determine the effect of efforts related to the provision of equal educational opportunity. Completion of this information is optional.



Information regarding the provision of auxiliary aids and services to qualified students with disabilities can be found in Admissions and Academic Policies of this *Bulletin*. Students considering such assistance should contact the Director of Disability Access Services at (314) 516-6554 voice or (314) 516-5212 TT for further details.

Address inquiries regarding admission to all divisions of the university to the Director of Admissions, University of Missouri-St. Louis, One University Boulevard, St. Louis, Missouri 63121-4400. For information concerning the University of Missouri-Columbia, the University of Missouri-Kansas City or the University of Missouri-Rolla, write directly to the Director of Admissions at the appropriate campus or visit our website at www.umsl.edu.



University Programs and Offices

Area Code (314)

Academic Advising (Undeclared Majors)

225 Millennium Student Center, 516-5300

Academic Affairs, Provost and Vice Chancellor

426 Woods, 516-5371

Administrative Services, Vice Chancellor

130 Normandie Hall 516-6100

Admissions

351 Millennium Student Center, 516-5451

Alumni Center

7956 Natural Bridge, 516-5722

Alumni and Constituent Relations

101 Woods, 516-5833

Anthropology, Department of

507 Clark, 516-6020

Art and Art History, Department of

590 Lucas, 516-5975

Fine Arts

201 Fine Arts Bldg., 516-6967

Gallery 210

The Telecommunity Center, 516-5976

Gallery FAB

Fine Arts Bldg., 516-6967

Gallery Visio

170 Millennium Student Center, 516-7922

Arts and Sciences, College of

303 Lucas, 516-5501

Athletics Office

225 Mark Twain, 516-5661

Biology, Department of

223 Research Bldg., 516-6200

Bookstore & Computer Shop

209 Millennium Student Center, 516-5763

Business Administration, College of

487 SSB, 516-5888 (UG Academic Advising)

Cable TV Studio (ITC Control Room)

113 Lucas, 516-6171

Cafeteria

Millennium Student Center

Career Services

278 Millennium Student Center, 516-5111

Cashier's Office

285 Millennium Student Center, 516-5151

Center for Academic Development (CAD)

507 Tower, 516-5194

Center for Business and Industrial Studies

220 CCB, 516-5857 or 6108

Center for Economic Education Entrepreneurship

306 Tower, 516-5248

Center for Emerging Technologies

4041 Forest Park Ave, 63108, 615-6900

Center for Human Origin & Cultural Diversity

505 & 507 Clark, 516-6020

Center for the Humanities

406 Lucas, 516-5699

Center for International Studies

366 SSB Bldg., 516-5753

Center for Molecular Electronics

302 CME, 516-5334

Center for Neurodynamics

333 Benton, 516-6150

Center for Student Success

225 MSC, 516-5300

Center for Teaching and Learning

421 Woods Hall, 516-4508

Center for Transportation Studies

154 University Center, 515-7270

Center for Trauma Recovery

Kathy J. Weinman, Lower Level, 516-6738

Chancellor's Office

401 Woods, 516-5252

Chemistry and Biochemistry, Department of

315 Benton, 516-5311

Child Development Center, University

130 South Campus Classroom Bldg., 516-5658

Communication, Department of

590 Lucas, 516-5485

Computing, (Information Technology Services)

451 CCB, 516-6000

Continuing Education, Division of

Program Support

201 J.C. Penney, 516-5961

Marketing & Information

225 J.C. Penney, 516-5668

Counseling Services

126 Millennium Student Center, 516-5711

Criminology and Criminal Justice, Department of

325 Lucas, 516-5031

Degree Audit Program (DARS)

351 Millennium Student Center, 516-6814

Development Office

308 Woods, 516-5664

Disability Access Services

144 Millennium Student Center, 516-6554

Dispute Resolution Program

362 SSB Bldg., 516-6040

E. Desmond Lee Technology & Learning Center

100 Marillac Hall, 516-4800

Economics, Department of

408 SSB, 516-5351

Education, College of

201 Education Administration Bldg., 516-5109

Graduate Education

123 SCCB, 516-5483

Undergraduate Education

155 Marillac, 516-5937

Counseling and Family Therapy, Division of

469 Marillac Hall, 516-5782

Educational Leadership and Policy Studies,

Division of

269 Marillac, 516-5944

Educational Psychology, Research, and Evaluation,

Division of

402 Marillac Hall, 516-5783

Teaching and Learning, Division of
369 Marillac, 516-5791

**Engineering, UM-St. Louis/Washington University
Joint Undergraduate Engineering Program**
228 Benton, 516-6800

English, Department of
484 Lucas, 516-5541

Executive Leadership Institute
427 SSB, 516-5276

Environmental Health and Safety
7700 Florissant Road, 516-6363

Facilities Services
S22 MSC North Garage, 516-6320

Financial Aid
327 Millennium Student Center, 516-5526

Fine Arts and Communication, College of
201 General Services Building, 516-4570

Foreign Languages and Literatures, Department of
554 Clark, 516-6240

Gerontology Programs
406 Tower, 516-5280

Graduate Admissions
217 MSC, 516-5458

Graduate School
421 Woods, 516-5900

Graphics & Printing
252 General Services, 516-5167

History, Department of
484 Lucas, 516-5681

Horizons Peer Counseling
180 MSC, 516-5380

Human Resource Services
211 GSB, 516-5804

Information Technology Services
451 CCB, 516-6000

Interfaith Campus Ministries
366 Millennium Student Center, 516-4022

International Business Institute
461 SSB, 516-6286

International Center for Tropical Ecology
216 Benton Hall, 516-4246

International Student and Scholar Services
261 Millennium Student Center, 516-5229

KWMU 90.7 FM Radio
104 Lucas, 516-5968

Libraries
Thomas Jefferson, 516-5057
St. Louis Mercantile, 516-7240
Ward E. Barnes South Campus
Complex, 516-5576

Mathematics and Computer Science, Department of
303 CCB, 516-5741

**Metropolitan Information and Data Analysis Services
(MIDAS)**
362 SSB Bldg., 516-5273

Missouri Research Park
14 Research Pk. Dr., Suite 200
St. Charles, MO 63304
(636) 441-7701

Multi-Cultural Relations
190 Millennium Student Center, 516-6807

Music, Department of
211 Music Bldg., 516-5980

National Scholarship Information, Office of
Pierre Laclede Honors College, 516-5243
C107 Provincial House, 516-6871

National Student Exchange, Office of
Pierre Laclede Honors College,
C107 Provincial House 516-6871

Nursing, College of
150 Administration Building-South Campus, 516-6066

Office of Equal Opportunity/Affirmative Action
127 Woods, 516-5695

Optometry, Clinics (Center for Eye Care)
153 Marillac, 516-5131
East St. Louis Eye Center
601 James Thompson Blvd.,
Building D, Suite 2030
East St. Louis, Ill. 62201
618-482-8355
On-campus 516-6908
Harvester Eye Center
11 Charlestowne Plaza, St. Charles, MO 63303
636-441-5585
Optometric Center
3840 Lindell Blvd,
535-5016

Optometry, College of
331 Marillac, 516-5606
Student Services,
317 Marillac, 516-6263
University Eye Center
153 Marillac, 516-5131

Parking and Transportation
7700 Florissant Road, 516-4190

Payroll
211 General Services Bldg., 516-5237

Performing Arts Center, 516-4100

Philosophy, Department of
599 Lucas, 516-5631

Physical Education Program
234 Mark Twain, 516-5226

Physics and Astronomy, Department of
503J Benton, 516-5931

Pierre Laclede Honors College
C106 Provincial House, 516-6870

Police (Institutional Safety)
44 Telecommunity Center, 516-5155

Political Science, Department of
347 SSB, 516-5521

Printing Services
261 General Services Bldg., 516-5233

Psychology, Department of
325 Stadler, 516-5391

Public Policy Administration Master's Program
406 Tower, 516-5145

Public Policy Research Center
362 SSB Bldg., 516-5273

Records and Transcripts

351 Millennium Student Center, 516-5676
Regional Center for Education and Work
872-8282

Registration

351 Millennium Student Center, 516-5545

Research Administration, Office of

341 Woods, 516-5897

Residential Life

C102 Provincial House, 516-6877

ROTC, Army

324 Woods Hall, 516-4872

Social Work, School of

590 Lucas, 516-6385

Sociology, Department of

707 Tower, 516-6366

Sports Information

225 Mark Twain, 516-5660

Student Life, Office of

366 Millennium Student Center, 516-5291

Student Affairs, Vice Provost

301 Woods, 516-5211

Student Government Office

375 Millennium Student Center, 516-5105

Theatre, Dance and Media Studies, Department of

243 General Services Bldg., 516-4572

Transfer Services and Articulation

225 MSC, 516-5162

Transportation Studies, Center for

154 University Center, 516-7270

UM-Rolla Engineering Education Center

34 Telecommunity Center, 516-5431

University Communications & Marketing

414 Woods, 516-5851

University Eye Center

153 Marillac, 516-5131

University Health Services

131 Millennium Student Center, 516-5671

University Meadows

2901 University Meadows Drive, 516-7500

University Relations

407 Woods, 516-5255

Veteran Affairs, Office of

351 Millennium Student Center, 516-5548

Video Instructional Program

303 Lucas, 516-5501

Wellness Resource Center

180 Millennium Student Center, 516-5414

Women's and Gender Studies, Institute for

211 Clark, 516-5581



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Introduction to UM-St. Louis

The University of Missouri-St. Louis is one of four campuses that constitute the University of Missouri. Established in Columbia in 1839 on the ideals of Thomas Jefferson, the University of Missouri became a land-grant institution upon passage of the Morrill Act by Congress in 1862.

The university remained a single-campus institution until 1870, when the Rolla campus was opened. In the 1960s a movement began across the country toward creation of public universities located within metropolitan centers. That movement marked the most significant change in higher education in the twentieth century, and the University of Missouri-St. Louis is a product of that educational development. Two campuses were added in 1963. The private University of Kansas City became the university's Kansas City campus, and an entirely new campus was started in St. Louis.

The notion of a major public institution serving the St. Louis area evolved from a dream to a solid reality, which today exceeds the expectations of those who created it. Since the doors of the old Administration Building opened nearly 40 years ago, UM-St. Louis has become the largest university serving St. Louisans and the third largest university in the state. The university has grown from 30 faculty in 1963 to more than 1300 faculty members and more than 1,000 staff members, committed to the future of the St. Louis area through teaching, research, and service.

One of the keys to this university's development as an outstanding institution has been the careful selection of faculty over the years. UM-St. Louis has attracted some of the top authorities in many fields. More than 90 percent of the full-time regular faculty hold doctoral degrees, a figure that far exceeds the national average. These professionals develop new theories and new procedures, and in so doing attract millions of dollars each year in research funding.

Student enrollment has grown from 600 in 1963 to more than 15,500. The numbers have changed, but not the spirit. Faculty and students are still most concerned with the education of new talent, which is the basis for the future social, intellectual, and economic health of Missouri's largest metropolitan area. From its beginning on what was once the site of a country club with a single building, UM-St. Louis has grown to a large modern campus of more than

320 acres with more than 60 buildings used to support academic and other University activities.

The curriculum has grown to include 47 undergraduate programs, 33 master's programs, seven preprofessional programs, 2 education specialists, 14 doctoral programs, and one professional degree program. Programs address the particular needs of older students returning to school; of students pursuing pre-architecture, pre-law, pre-medicine, pre-pharmacy, pre-engineering, or pre-journalism courses, and of students interested in urban careers. Many opportunities exist for students to combine their academic course work with internships that often lead to job offers.

Mission Statement

The University of Missouri-St. Louis is the land-grant research institution committed to meeting diverse needs for higher education and knowledge in the state's largest metropolitan community. It educates traditional and nontraditional students in undergraduate, graduate and professional programs so that they may provide leadership in the health professions; liberal and fine arts; science and technology; and metropolitan affairs such as business, education and public policy. University research advances knowledge in all areas, and through outreach and public service, assists in solving, in particular, problems of the S. Louis region and beyond.

Academic programs are enriched through advanced technologies and partnerships that link UM-St. Louis to communities, institutions and businesses regionally, nationally, and internationally. Its special commitment to partnership provides UM-St. Louis with a leadership role among public educational and cultural institutions in improving the region's quality of life, while its unique relations with two- and four-year colleges and universities promote seamless educational opportunities.

Academic Structure

UM-St. Louis consists of the College of Arts and Sciences, College of Business Administration, College of Education, College of Fine Arts and Communication, Graduate School, Pierre Laclede Honors College, College of Nursing, College of Optometry, School of Social Work, UM-St. Louis/Washington University Joint Engineering Program, and the Division of Continuing Education.

College of Arts and Sciences

Classes in the College of Arts and Sciences offer students the opportunity to engage in creative and critical thinking, learn to appreciate pattern in complexity, reflect on important issues of the past and present, and hone their ability to communicate effectively both verbally and in writing. Across the curriculum, the College emphasizes "Learning through Research," an approach in which students actively identify and analyze a variety of intellectual approaches and forms of information.

The campus' oldest and largest college, Arts and Sciences takes special pride in its professional faculty of nearly 220, all of whom hold earned Ph.D. degrees or other appropriate terminal degrees.

Whether completing general education requirements or pursuing a specific degree, undergraduate students have the opportunity to learn from internationally renowned faculty members.

Student participation in internships with the university's public and corporate partners paves the way for subsequent employment. Collaborative research by students and faculty similarly expands both intellectual horizons and prospects for graduate study and professional careers.

Alumni of the College of Arts and Sciences include physicians, lawyers, teachers, political leaders, scientists, corporate executives, college and university faculty, psychologists, social workers, and a host of other professionals.

College of Business Administration

Through its undergraduate and graduate degree programs, the College of Business Administration expands student capability in communication, analysis, and judgment, enabling its graduates to deal effectively with today's complex economic environment. The college maintains a balance between the specialization of professional courses and the diversity of liberal arts.

College of Education

Consistently one of the top two institutions in the state in preparation of educators, the College of Education provides undergraduate and graduate programs to support and sustain educational leaders. Its programs emphasize state-of-the-art technological applications to enhance teaching and learning as well as collaboration among university, school, agency, and corporate partners.

College of Fine Arts and Communication

The College includes the departments of Art and Art History, Communication, Music, and Theatre, Dance and Media Studies. The faculty and alumni of the College have distinguished themselves as scholars, visual artists, teachers and performers. The University's new \$55 million Performing Arts Center that opened in the fall of 2003, provides two world-class venues for performances. In addition, three galleries offer space for display of student and faculty artwork as well as visiting exhibitions.

Graduate School

Programs offered in the Graduate School fall into two categories: professional programs designed to develop a special competence in a particular field and academic programs designed to develop the student's command of a range of related subjects within a field. These graduate programs are structured to meet the needs of the metropolitan area and to give students the skills and professional competence to succeed.

College of Optometry

The College of Optometry is one of 17 such schools and colleges in the United States providing professional optometric education and clinical experience. Facilities are furnished with equipment and technology for the enhancement of both teaching and research. The college operates the University Eye Center on campus, the Optometric Center of St. Louis in the city's Central West-End, the Harvester Eye Care Center in St. Charles County, and the East St. Louis Eye Center, jointly owned and operated by the UM-St. Louis College of Optometry and Southern Illinois University at Edwardsville.

Pierre Laclede Honors College

Members of the Pierre Laclede Honors College major in every undergraduate program, but each student shares a commitment to a challenging, innovative general education curriculum. The Honors program offers small seminars which emphasize critical reading and open discussion upon which students base essays and research papers.

The honors experience also requires independent study, which may be undertaken as part of the major or in the Honors College. These projects may include guided reading, undergraduate research, and internships or public service projects. Honors College students are also encouraged to consider exchange study, whether abroad through the Center for International Studies or in the USA or Canada through the National Student Exchange

In the Honors College, students and faculty work together to foster an intellectual climate in which democracy, diversity, civility and excellence are fundamental values.

College of Nursing

The College of Nursing offers programs at the bachelor's, master's, and doctoral levels. The Bachelor of Science in Nursing is available for a student wishing to pursue a program of study leading to eligibility to complete state licensure examinations to become a registered nurse (R.N.). In addition, the accelerated track, an upper-level option designed for the associate degree or diploma-educated registered nurse or exceptional transfer student avoids repeating basic nursing course work. The Master of Science in Nursing, a cooperative program with UM-Kansas City School of Nursing, offers studies in adult, children's, and women's health. Practitioner options are also available (adult, family, pediatric, and women) as part of the MSN program. The Ph.D. in Nursing offers studies focused on health promotion and protection, health restoration and support, and health care systems.

UM-St. Louis/Washington University Joint Undergraduate Engineering Program

The University of Missouri-St. Louis and Washington University have joined forces to offer ABET-accredited Bachelor of Science degrees in mechanical, electrical, and civil engineering. Students who enter the program take about half of their course work--mathematics, physics, chemistry, humanities and social sciences, and some elementary engineering subjects--on the campus of UM-St. Louis. The remaining half consists of upper-level engineering courses and laboratories taken on the campus of Washington University and taught by Washington University engineering faculty members. Students register for all courses at UM-St. Louis, pay tuition at UM-St. Louis rates (plus a small surcharge on engineering courses), and receive their degrees from the University of Missouri.

Division of Continuing Education

Through the Division of Continuing Education at UM-St. Louis, the research-based knowledge of our excellent faculty is brought to the citizens of the greater St. Louis metropolitan area at times and places, and in formats, that meet the lifelong learning needs of our adult students. Partnerships with a number of community cultural and educational institutions provide greater access to public higher education and to the resources of our fine campus.

Continuing Education provides a wide variety of credit courses and noncredit professional development programs that can help adults keep abreast of new developments in their field, prepare them for a career in a new field of endeavor, or enrich their personal and family life. Courses leading to degree-completion programs are also offered at the St. Louis Community College South County Education and University Center and on the campuses of St. Charles Community College, Jefferson College and Mineral Area College.

Office of International Student and Scholar Services of the Center for International Studies

The Office of International Student and Scholar Services assists international students and scholars with undergraduate and graduate admission, credential and transfer credit evaluations, visa and immigration advising, taxation matters, pre-arrival and cultural adaptation assistance, new international student and scholar orientation, prospective student information requests, and personal advising. The office also coordinates activities for integration of students and scholars into the community by facilitating cultural events and activities, coordinating the annual International Week, and working closely with other campus and community organizations.

Student Life

Although UM-St. Louis provides opportunities for all students through a demanding curriculum, the life of the university is not all work. There are a great many leisure-time activities, either free or at reduced cost to students. Numerous student organizations, from the Accounting Club to Zeta Tau Alpha sorority, seek members and leaders. Interesting speakers, concerts, film series, plays, exhibits, recitals, and a host of informal gatherings crowd each week's schedule. The St. Louis area offers still more recreational, sports, and cultural events.

The university offers a wide range of varsity and intramural sports for students, whether as players or spectators. On the varsity level, Rivermen and Riverwomen compete in most major sports. UM-St. Louis men's soccer teams have participated in numerous NCAA Division II tournaments; the team won the national title in 1973. The men's basketball, baseball, and golf teams frequently play in national tournaments. The expanding women's program includes varsity competition in basketball, soccer, softball, volleyball, and tennis. The women's soccer team ranks annually in the top 20 teams nationwide.

The Mark Twain athletic facility offers a state-of-the-art fitness center, weight room, swimming pool, and

basketball, volleyball, handball, and racquetball courts. Outdoor facilities include tennis and handball courts, a fitness trail, and baseball, soccer, and softball fields. Students will find fitness activities, both organized and individual, to suit their interests and needs. Intramural sports are available to all students, with schedules designed for maximum participation.

Graduates

The graduates of UM-St. Louis reflect the diversity found in a metropolitan community. The university has more than 70,000 graduates living in all 50 states and several foreign countries. Of these alumni, more than 80 percent continue to live and work in the St. Louis metropolitan area.

The university is a major force in providing the region with a highly educated and diverse work force. Alumni can be found in companies and organizations throughout the region and nation.

Undergraduate Study

This section includes admission and academic policies for students seeking undergraduate degrees from the University of Missouri-St. Louis.

Admission and Application Procedures

Admission for First-Time Freshmen

The University of Missouri has a uniform policy for admission of freshman students to its four campuses. The procedure for regular admission from high school is based on high school class rank, performance on a standardized college aptitude test, and required high school units. Veterans who have been out of high school for five or more years should refer to the Veterans and Mature Adults section.

Admission Procedure. Students applying as first-time freshmen (i.e., students without previous college work) need to submit to the Director of Admissions the following four items:

- **Undergraduate Application for Admission**

Applications may be requested by calling the Office of Admissions at (314) 516-5451. Applications are also available via the Internet. Applicants may apply on-line at <http://www.umsl.edu/admission>.

- **Application Fee**

The \$35.00 application fee (\$40.00 for international students) may be paid by:

- A check or money order made payable to UM-St. Louis
- A credit card by using the on-line application
- A credit card by calling (314) 516-6930
- Cash by appearing in person at the office of the Registrar in 351 Millennium Student Center.

- **High School Transcript and Class Rank**

A transcript must be sent directly from the high school to the UM-St. Louis Office of Admissions. The transcript should indicate class rank, all coursework, and, when available, date of graduation. Required college aptitude test scores may also be submitted via this transcript or directly from the testing agency.

- **College Aptitude Test**

Freshman admission requires that a test score be submitted for each applicant, from one of the following:

- **American College Testing Program (ACT)**
These tests are administered at UM-St. Louis and at many other locations across the country. To request a test packet, call the Office of Admissions at (314) 516-5451 or your high school counselor.

- **Scholastic Aptitude Test (SAT)** These tests are administered at many locations across the country.

Contact SAT at (609) 771-7600 for testing information.

When to Apply

Qualified applicants are admitted and notified by letter of their admission in the order that completed applications are received. Applications are accepted after October 1 for the next fall semester on the basis of six or more high school semesters.

Admission Requirements

Any 1997 or later high school graduate is admissible with evidence indicating he or she meets both the following requirements:

At least 17 units of credit (1 unit=1 year in class) as follows:

- **English:** 4 units. Two units emphasizing composition or writing skills. One of the remaining 2 units may be in speech or debate.
- **Mathematics:** 4 units (Algebra 1 and higher).
- **Science:** 3 units not including general science, one of the 3 units must be a laboratory course.
- **Social Studies:** 3 units.
- **Fine Arts:** 1 unit.
- **Foreign Language:** 2 units. Must be 2 units of a single foreign language.
- Math and foreign language units may be accepted from middle/junior high school.

In addition to the 17-unit requirement, each student will be evaluated on high school rank and test score (ACT or SAT). Students with a composite ACT score of 24 or SAT of 1100 will be admitted without regard to class rank. Class rank will be used to determine eligibility for admission when the student's ACT score is from 17 to 23 (SAT is 800 to 1090).

If the ACT Composite score is 17 to 23 or the total of SAT Verbal and Math scores is **800 to 1090**, the applicant **must** meet the following high school class rank requirement to be admitted automatically.

ACT	SAT Total Verbal, Math	High School Class Percentile Rank
23	1050-1080	48
22	1010-1040	54
21	970-1000	62
20	930-960	69
19	890-920	78
18	840-880	86
17	800-830	94

If you

- A. Rank in the top 10% of your graduating class of a Missouri high school; **and**
- B. Complete the college preparatory curriculum which includes at least 17 units of credit (four units each of English and math, three units of social studies, two units of a single foreign language, and one unit of fine art); **and**
- C. Submit an ACT/SAT score,

you will be eligible for automatic admission to any campus of the University of Missouri.

If you

- A. Graduate from a Missouri high school that does not rank its graduates; **but**
- B. Have taken a college preparatory curriculum which includes at least 17 units of credit (four units each of English and math, three units of social studies, three units of science, two units of a single foreign language, and one unit of fine art); **and**
- C. Achieve a 3.5 GPA on a 4.0 scale in these core courses; **and**
- D. Submit an ACT/SAT score,

you will be eligible for automatic admission to any campus of the University of Missouri.

Applicants who do not meet these criteria may still be admitted, depending on other evidence of likely success and campus enrollment objectives.

These applicants can apply to the Director of Admissions. Additional factors considered for admission may include:

- Extracurricular activity.
- Outstanding talent and/or abilities.
- College preparatory courses taken.
- Evidence of marked improvement over time in high school academic record.
- Significant work experience and/or family responsibilities.
- A personal statement to one or more of the above in student's own hand (in essay form).
- Recommendations by teachers, counselors, or principals.

For additional information regarding admission requirements, contact the Office of Admissions at (314) 516-5451 or by E-mail at: admissions@umsl.edu.

Acceptance

Upon graduation, students must submit a final high school transcript indicating their class rank and graduation date. First-time freshmen may be required to take a placement examination in mathematics.

Advanced Standing for Entering Freshmen.

UM-St. Louis grants credit hours to entering freshmen who, through their performance on College Entrance

Examination Board Advanced Placement Tests and faculty-administered tests, demonstrate proficiency in certain college-level courses such as biology, chemistry, English, foreign languages, history, mathematics, political science, and physics. For further information and applications, write to College Board Placement Examinations, Box 592, Princeton, New Jersey 08540. The score-reporting institution code number for the University of Missouri-St. Louis is 6889. Test scores should be sent to the Director of Admissions. A brochure with detailed information is available in the Office of Admissions.

Dual Credit

Accredited programs such as the Advanced Credit Program at the University of Missouri-St. Louis enable qualified high school juniors and seniors the opportunity to earn college credits while completing high school. General education courses are offered through the University in the College of Arts and Sciences and through the College of Fine Arts and Communication. Information about the transferability of credits from dual credit courses is available from the Office of Admissions, and further information about the Advanced Credit Program may be obtained by calling (314) 516-7005.

Dual High School/University Enrollment

Superior high school students may be admitted in a special student category to take one or more University courses during their junior or senior years of high school or during the summers. Students must submit a dual enrollment application and a high school counselor's or principal's recommendation. Students are admitted on the evidence of academic excellence. Admission is limited and governed by available space, and students must meet the prerequisites for the course or courses. Students should contact the College of Arts and Sciences at (314) 516-5501 for more information.

College Level Examination Program

Applicants may earn advanced credit through the College Level Examination Program (CLEP). CLEP offers subject examinations for credit in specific areas. These examinations can be taken any time, provided the student has not taken a college credit course in the test area. Consultation with an advisor is highly recommended before taking an exam. CLEP tests are given in the Assessment Center by appointment only. Contact the Assessment Center at (314) 516-6396 or their website: www.umsl.edu/services/cad/clep.html. To get more information on CLEP, visit their website: www.collegeboard.com/clep/

Credit for Military Service

Credit may be allowed for service training programs conducted by the various Armed Forces branches. The American Council of Education's recommendations in A Guide to the Evaluation of Educational Experiences in the Armed Services generally serve as a basis for granting

such credit. To count toward a degree, the credit granted must be appropriate to the student's curriculum.

Trial Admission

Applicants who do not meet the regular admission standards may be admitted on a trial basis. Each student's academic record will be reviewed by the Director of Admissions and decisions will be made on a case-by-case basis.

High School Equivalency Applicants

Individuals may seek admission on the basis of passing the General Education Development (GED) test with a minimum score of 2500 (for tests taken after January 1, 2002; minimum score of 250 required for tests taken prior to January 1, 2002).

In addition, the following must be presented:

- A completed undergraduate application available on-line at <http://www.umsl.edu/admission/>
- A \$35 non-refundable application fee (\$40 for international students)
- ACT composite score of at least 24 or SAT composite of 1100
- A high school transcript if ACT/SAT scores are present.

Home-Schooled Students.

UM-St. Louis welcomes home-schooled students. To be admitted for undergraduate admission, the home-schooled student must present the following:

- A completed Undergraduate Application available online at <http://www.umsl.edu/admission/>
- \$35 Application Fee (\$40 for international students)
- ACT Composite score of 24 or SAT of 1090
- A copy of course of study or transcript reflecting all coursework and grades earned.

Veterans and Mature Adults

Applicants may be admitted as degree or non-degree-seeking students if they are veterans of military service or over age 21 and have not previously earned college credit, have not been in school for several years, have not earned a high school diploma or passed the GED; or if they have a diploma but do not meet regular admission requirements from high school. Non-degree-seeking students can become degree candidates on the basis of their performance in University course work.

Admission for Transfer Students

UM-St. Louis welcomes transfer students; students should be aware that actual requirements for degrees vary from institution to institution.

Students transferring from other colleges and universities must submit the following information to the Director of Admissions:

- Undergraduate Application for Admission
- A \$35 application fee (\$40 for international students)
- High school transcript (or GED) if the applicant has less than 24 hours of college-level course work.
- Official transcripts from all colleges/universities attended. Hand-carried credentials are not accepted.

All credentials submitted for admission become the property of the University.

A transferring student who has completed fewer than 24 earned semester hours of college-level work must apply under the procedures for admission to the freshman class and must have at least a 2.0 overall grade point average (4.0 system) in all college-level courses attempted at previous institutions.

Suspended and Dismissed Transfer Students.

Students under suspension or dismissal from another institution or whose previous record is of unsatisfactory quality may need to appeal to the Faculty Senate Committee on Admissions and Financial Aid.

Missouri State Transfer Agreement CBHE Statement
Students transferring into UM-St. Louis and out of UM-St. Louis may use the Coordinating Board of Higher Education (CBHE) Articulation Agreement. The agreement outlines statewide undergraduate general education requirements which satisfy the general requirements for students transferring into UM-St. Louis and students transferring out of UM-St. Louis to other public higher education universities in the state. UM-St. Louis requires mathematics proficiency beyond the general requirements in the CBHE Statement. Please refer to the General Education section of this bulletin, goal number six for details.

Transfer Credit

According to the articulation agreement among public institutions within the state of Missouri, the following guidelines will govern transfer of credit to UM-St. Louis from colleges and universities within the state of Missouri. These guidelines also apply to students transferring to UM-St. Louis from schools located outside Missouri. Advanced standing in the form of credit hours may be allowed for work satisfactorily completed in another college or university of recognized standing, public or private, located in the state of Missouri, as long as the work satisfies the requirements of the University division in which the student registers.

The academic record at a given institution will include all courses attempted. Grades of D or better earned in college-level work at an accredited or approved institution of higher education should receive full credit when transferred to UM-St. Louis. The University, however, will

treat all grades on courses attempted on the same basis as that of a UM-St. Louis student. For example, if a UM-St. Louis student, is required to repeat a specified course having earned a D grade, a transfer student will also be required to repeat the same course if it carried a D grade.

Advanced Standing

Advanced standing includes credit by examination, such as Advanced Placement (AP), the College-Level Examination Program (CLEP), and Defense Activity for Non-Traditional Education Support (DANTES). It also includes credit by portfolio review (Bachelor of Fine Arts only). These lower-division credits may **not** apply at the senior level. For examination credit, students should submit appropriate transcripts to the Office of Admissions before their first semester at UM- St. Louis. Likewise, the Fine Arts department should be consulted for portfolio reviews. Early attention to these matters is essential to avoid unnecessary course work or repeats that can lead to loss of credit. If examinations are completed at a later date, transcripts should be submitted as soon as they are available.

Shortly after all official transcripts are on file, a student's previous academic record will be evaluated to determine which courses are applicable. Should there be any question concerning applicability of any courses, students should contact the Dean's office of their academic unit. Degree checks, determining whether courses meet a specific degree requirement and whether courses are accepted as a part of the student's academic major, are made in the office of the Dean concerned.

Associate Degree Transfers from Community Colleges

A student admitted to the University and holding an associate degree applicable toward the baccalaureate degree will be accepted in junior standing. Students fulfilling the general education requirements outlined by the Missouri Coordinating Board of Higher Education and certified by the sending institution will have met the lower division general education requirements at UM-St. Louis. Students with MO AA degrees that include a CBHE approved general education core may transfer more than 64 credit hours for lower division courses. Any additional lower division course credits above 64 credit hours must be applicable to the baccalaureate degree or must be a prerequisite for an upper division course in the major. However, this does not exempt the student from meeting specialized lower-division degree requirements of specific departments. Courses completed in the associate degree program are evaluated for application to specific degree requirements by the same criteria used for transfer students from other colleges and universities.

Transfers Without an Associate Degree

Transfer applicants who do not have an associate degree will have their transcripts evaluated on a course-by-course basis. Students who have fulfilled the general education requirements outlined by CBHE and certified by the

sending institution will meet the University's general education requirements.

Transfers Within the University of Missouri System

A student not in good standing at another campus of the University of Missouri (suspended or dismissed) must submit an appeal to the Senate Committee on Admissions and Student Financial Aid in order to be admitted to UM-St. Louis.

Any course that leads to an undergraduate degree on any campus of the University of Missouri shall be accepted in transfer toward the same degree on any campus of the University offering that degree. Grades, including D and F grades, and honor points earned in such courses will also transfer and will be included in the cumulative grade point averages. Unresolved problems related to transferability of credit may be appealed to the Dean of the College or their representative.

Students within the last 30 hours of graduation may take a limited number of courses at another campus in the UM system, provided the last 15 hours are taken at UM-St. Louis and the work is approved by their respective Deans and departments.

Midwest Student Exchange

The Midwest Student Exchange Program is an initiative designed by the Midwestern Higher Education Commission to increase interstate educational opportunities for students in its member states. The program enables residents of Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota and Wisconsin to enroll in the institutions and specified programs located outside their home state at reduced tuition levels.

Students from Other Countries

Prospective students living outside the United States and its possessions should write to the Office of International Student and Scholar Services at the address below at least one year before the date of desired admission for information about application to the University. Students will be expected to supply official original secondary and college/ university transcripts from all schools attended as well as other official original documents. International students must also pay a \$40 application fee. All students should make arrangements to take the Test of English as a Foreign Language (TOEFL) well in advance of their admission date.

Since 1998, all students in F-1 and J-1 status have been required to purchase an inexpensive insurance policy with coverage for illness and accidents, billed directly to the student's accounts. For details contact:
Office of International Student and Scholar Services
261 Student Millennium Center
One University Boulevard
St. Louis, MO 63121-1400

Returning Students

Returning undergraduate students who are admitted and/or enrolled who did/did not attend will be automatically eligible to register without having to reapply for the period of one academic year.

Students who do not attend for two semesters will be required to complete a returning student application and provide official transcripts from other colleges and universities attended since last enrolled as an UMSL student.

The returning student application is on line at <http://www.umsl.edu/admission> or by calling the Office of Admissions at (314)-516-5451.

Visiting Students

Students who are attending another college or university who do not wish to earn a degree from the University of Missouri-St. Louis may register as visiting college students. Visiting student forms can be obtained from the Office of Admissions, the Office of the Registrar, or on-line at <http://www.umsl.edu/admission> or by calling (314) 516-5545. At the end of the session, students must request that their grades be reported by transcript to their respective schools. Financial aid is not available for such students.

Non-Degree-Seeking Students

An individual wishing to enroll in a course but is not seeking a degree may apply to the University as a non-degree-seeking student. No transcripts are required; however, the admission applies only for that particular semester. To attend for another semester, the student must reapply. The non-degree application is available on-line at <http://www.umsl.edu/admission> or by calling (314) 516-5451, in the office of the Registrar, or in the office of Admissions. Financial aid is not available for such students.

UM-St. Louis Express

UM-St. Louis Express provides Missouri's Senior Citizens (65 and older) easy access to undergraduate courses without limit on an audit (not for credit) space-available basis. Graduate courses are not available through this program. Students are subject to: non-refundable \$25 registration fee, parking fee, and course-related fees. Former UMSL Express students who reapply for the Program must again pay the registration fee. Students interested in attending as an UMSL Express student may obtain a registration form from the Office of Admissions. Students should complete and return the form with proof of age to the Office of Admissions on the day before classes are scheduled to begin or after.

Registration**New Students**

Upon admission to the University, students are notified that instructions will be sent by the Registrar's office before registration.

After the close of the preregistration-by-appointment period, all newly admitted or readmitted students are eligible to register. Students wishing to register for more than a normal course load must obtain approval from their Dean.

Former Students

Former students not currently enrolled must submit a reenrollment application see "Returning Students" above.

Currently Enrolled Students

Currently enrolled students are given the opportunity to preregister, by appointment, before all other students. Students wishing to preregister for the next semester in a different division or school must complete a Change of Division form available on line at www.umsl.edu/admission, by calling (314) 516-5451, in the office of the Registrar or in the office of Admissions.

Auditor

Students may enroll as auditors in any course with the prior consent of the instructor and Dean of the school or college in which the auditors desire to be registered. They may be dropped from the course when, in the judgment of the instructor and Dean, their record justifies such action. Auditors are charged full fees and receive no academic credit.

Registration Cancellation

Students who have enrolled and paid their fees but do not wish to attend the university may cancel their registration any time before the first day of the semester. Cancellation forms may be obtained at the Office of the Registrar. For the refund schedule for cancellation of registration after class work begins, see the *Schedule of Courses*.

Enrollment and Academic Advising

Undergraduate students are admitted to the college, school, or professional school which offers the degree program which was declared on the student's application. Undeclared students, visiting students, and non-degree-seeking students are admitted to the College of Arts and Sciences.

Undeclared students are encouraged to declare a major as soon as possible since it is important to determine what specific requirements must be satisfied to complete the baccalaureate program.

College of Arts and Sciences

All incoming undergraduate students are required to be advised. Advising services are available in the College Advising Office located in 303 Lucas or in their major department. Students who have declared majors are encouraged to contact their major departments as soon as possible. Please visit the College website for a complete list of Departmental Faculty Advisors.

The departments in the College of Arts and Sciences as well as the School of Social Work offer majors, minors, and certificates in the humanities, social sciences, mathematics and computer science, and the biological and physical sciences. Interdisciplinary programs are available in Liberal Studies, Women's and Gender Studies, gerontology, labor studies, conservation biology, trauma studies, and more. The college also serves students with interests in the health sciences, pre-law, and pre-journalism. Information on these areas may be obtained in the Office of Undergraduate Student Affairs of the College of Arts and Sciences, 303 Lucas Hall.

Since there are specific requirements that each major must satisfy to complete a baccalaureate program, students are urged to declare their majors as soon as possible. This may be done at the time of application, or later in the Office of Undergraduate Student Affairs. Once a student declares a major, the department offering the degree will assign a faculty adviser and contact the student. The adviser, usually a faculty member in the student's area of interest, will assist in selecting suitable courses and advise the student in matters relating to degree requirements.

Students with specific concerns related to the specialized degree requirements of the college should consult with the academic departments responsible for their majors. Questions regarding transfer credit as they relate to a specific degree may be directed to the appropriate department. Students may contact the Office of Undergraduate Student Affairs of the College of Arts and Sciences by phone at (314) 516-5501 for clarification on any academic issues related to the division or by e-mail at artscience@umsl.edu

College of Business Administration

The College of Business Administration's office of undergraduate academic advising has a staff of professional academic advisors who provide assistance to students in planning their academic careers, and in dealing with: appropriate course selection; College of Business Administration requirements; general education requirements; evaluation of transfer credit; course prerequisites; school policies and regulations; and graduation requirements. Other matters related to a student's academic matriculation should also be directed to this office.

Transfer students who have been admitted to the College of Business Administration should contact the advising

office and plan to meet with an advisor early in the semester for an evaluation of transfer credit and the planning of their degree programs.

All students are urged to make advising appointments early during each semester, prior to registration dates, to obtain approval of schedules for upcoming semesters. Advising is a continuous and ongoing process. For additional information, call (314) 516-5888.

College of Education

Students wishing to prepare for teaching careers should consider the following:

Students who intend to teach in elementary, early childhood, middle school, special education, secondary education, or physical education settings must apply for admission to the College of Education.

Students who intend to teach in secondary school classrooms may choose to pursue the bachelor's degree in the College of Arts and Sciences plus certification, or the B.S. in education degree, which includes Missouri certification.

With either option, pre- and post-degree students must meet university and departmental requirements, as well as those for teacher education in Missouri. Regardless of which option a student chooses, he or she must complete the formal application to the teacher education program. Careful planning of individual schedules is necessary to ensure selection of appropriate courses and to avoid extending programs. Students should therefore seek advisory help from the TC&A (Teacher Certification and Advising) Office at the earliest opportunity. Regular consultation with advisers is essential. The office provides assistance to all students interested in professional education programs and certification requirements. Questions about admission to the teacher education program, sequencing of courses, prerequisites, graduation requirements, and related matters should be directed to (314) 516-5937.

College of Fine Arts and Communication

The College of Fine Arts and Communication includes the Department of Art and Art History, Communication, Music, and Theatre, Dance and Media Studies. These four departments offer eight degrees, both graduate and undergraduate. The College also serves students with interests in pre-architecture. The faculty and alumni of the College have distinguished themselves as scholars, visual artists, teachers and performers. The University's Touhill Performing Arts Center, which opened in the fall of 2003, provides two world-class venues for performances. In addition, three galleries offer space for display of student and faculty artwork as well as visiting exhibitions, and two labs support Communication Research.

The College of Fine Arts and Communication is further distinguished by its collaboration with the community. Endowed professorships link the University to the Saint

Louis Symphony, The St. Louis Art Museum, Opera Theatre of St. Louis, the Laumeier Sculpture Park and a variety of other St. Louis cultural institutions.

Students interested in these degrees or in need of preliminary advising may contact the Office of Undergraduate Student Affairs at (314) 516-5501 for an appointment or referral to the department in which you are interested.

Students and prospective students are encouraged to contact the department advising coordinators for the program of individual study. Students who maintain a relationship with their department have greater opportunities to meet other students with similar interests as well as optimize their student experience.

College of Nursing

The College of Nursing offers the bachelor of science in nursing degree (B.S.N.) for non-RNs through a four-year or accelerated program of study. RNs who are graduates of diploma or associate degree nursing programs complete a junior-senior B.S.N. track (RN to B.S.N.), which avoids repeating previous nursing education. With both options, students must meet university and College of Nursing requirements. The Master of Science in Nursing Degree Program is designed for the nurse who wishes to pursue advanced nursing practice. The College of Nursing's MSN program offers four functional roles: Nurse educator, nurse leader, nurse practitioner and clinical specialist. The MSN with the Nurse Practitioner option and the post MSN program allow students to apply for certifying exams for adult, family, pediatric, or women's health. The Ph.D. program offers post-baccalaureate and post MSN tracks for students who wish to conduct research to improve the health status of high-risk populations, provide leadership to develop policies that promote health, and serve as collaborators and principal investigators on interdisciplinary research teams. Careful planning is necessary to assure appropriate course sequencing. Students are strongly encouraged to develop a plan of study in conjunction with a nursing academic adviser to avoid extending the program of study.

Faculty maintain the right to make appropriate curriculum changes to comply with standards for accreditation and approval as stipulated by the Commission on Collegiate Nursing Education and the Missouri State Board of Nursing's minimum standards.

Pierre Laclède Honors College

Honors Scholars receive both academic advising and personal counseling from the college's administrative and teaching staff throughout their undergraduate careers. During the first two years, particular attention is given to the ways in which students fulfill their Honors College and university general education requirements and prepare themselves for their majors by taking the necessary prerequisites. After a major is declared, Honors College

advisement with regard to work done for honors credit continues and is supplemented by major-related advising provided by the appropriate academic unit. The college identifies candidates for major graduate fellowships and assists them in preparing their dossiers. Similar assistance is given to scholars planning to go on to graduate and professional schools or seeking career opportunities immediately upon graduation.

Other Considerations

Assessment

The University of Missouri has been directed by the Board of Curators to implement a variety of studies designed to assess the outcomes of university education. To this end two types of assessment are required of all students: A test of general educational development given to incoming freshmen and graduating seniors. A test or project, specified by the major department, given to graduating seniors. Students who do not comply will not be allowed to graduate. As alumni, graduates are encouraged to participate in assessment by completing questionnaires sent to them by the university.

Academic Residence

Students must be in residence for at least 24 of the last 30 hours of graded credit (exclusive of courses graded on a satisfactory/unsatisfactory basis), except under unusual circumstances, to be decided by the dean.

Graduation

Students should file a degree application form with their respective dean's office at least one year before the expected graduation date. (Students in the College Fine Arts and Communication should file their degree applications in 303 Lucas Hall). The dean's office makes a final check to determine that all graduation requirements have been met. Students should check with the dean's office or an adviser to be sure their program fulfills the requirements of the department and college or school, as well as the university general requirements. To assure graduating at the end of a specific semester, all work for that semester and any delayed grades from previous semesters must be completed with the grades sent to the Office of the Registrar no later than the official date for submission of final semester grades.

Course Schedules

Three times during the year, a *Schedule of Courses* is produced, listing the specific courses offered that semester and their meeting times and locations. This *Schedule* is posted on the UM-St. Louis web site:

<http://www.ums1.edu>, and available as follows:

Fall semester schedule: preceding March.

Winter semester schedule: preceding October.

Summer session schedule: preceding March.

The university reserves the right to cancel without notice any course listed in the *Bulletin* or the *Schedule of Courses*

for any semester or to withdraw any course which does not have adequate enrollment.

Academic Policies

Course Numbering

Each course bears a distinguishing number which identifies it within the department or academic unit and indicates, broadly, its rank. Effective Summer 2003, the University has adopted a new 4-digit numbering system.

To assist in understanding the course level, refer to the following guidelines:

Course Numbers	Explanation
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1-999	Courses which do not count toward the minimum requirements for any degree.
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Lower Division:

1000-1999	Courses open to undergraduate students, primarily focused toward freshmen; courses count toward the minimum for given degrees.
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2000-2999	Courses open to undergraduate students, primarily focused toward sophomores; courses count toward the minimum for given degrees.
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Upper Division:

3000-3999	Courses open to undergraduate students, primarily focused toward junior; courses count toward the minimum for given degrees.
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4000-4999	Courses open to undergraduate and graduate students, primarily focused toward seniors; courses count toward the minimum for given undergraduate degrees; depending on the specific program, courses may count for a given graduate degree.
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Graduate:

5000-5999	Graduate courses; also open to certification candidates and undergraduate seniors with permission from the Dean of the Graduate School. Courses count toward the minimum for given undergraduate and graduate degrees.
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6000-6999	Graduate courses open to master's degree and doctoral students. Courses count toward the minimum for given graduate degrees.
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7000-7999	Graduate courses open to doctoral students and master's degree students with special permission. Courses count toward the minimum for specific graduate degree.
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Optometry:

8000-8999 Courses open to optometry degree seeking students.

Credit Hours

The university credit unit is the semester hour, which represents a subject pursued one period weekly for one semester of approximately 16 weeks or for a total of approximately 16 periods for one term. Generally, a course valued at 3 semester hours meets for three periods weekly for one semester, a 2-credit course two periods a week for a semester, and so on. Normally, the lecture or recitation period is 50 minutes long and the laboratory period one hour and 50 minutes.

The number of credit hours is in parentheses after each course title. If the credit is variable, to be fixed in consultation with the instructor, it is shown by (credit arranged) or by minimum and maximum credit, such as research (2-8).

Grading System

The grading system available to all faculty in all schools, colleges, and other parallel units at UM-St. Louis consists of:

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

EX = Excused DL = Delayed
Y = No basis for a grade

Faculty have full discretion in using full-letter grades, plus/minus grades, or any combination of full-letter and plus/minus grades. The student's grade point average is computed by dividing the total quality points (number of credit hours for a course, multiplied by the grade value received) by the number of hours taken (excluding grade modified hours). Students of the University may have three separate Grade Point Averages. The first is the Campus GPA, which is computed by dividing the quality points earned from the grades of each course taken on the UMSL campus by the total course hours attempted on the UMSL Campus. Students who have attended any of the other three universities within the University of Missouri System, will also have a "System" GPA, which is computed by dividing the quality points earned from every course taken from a University within the UM System. In addition, transfer students (from outside the UM System) will also have a transfer GPA, which is computed from all courses the student has taken outside the UMSL campus or the UM System. It is calculated by dividing the quality points of all courses by the hours attempted.

Three options are available to students to obtain their final grades at the end of each semester. Unless a specific request is made through the Registrar's Office, the

University of Missouri system does not distribute grade reports to students via postal mail. Final course grades can be obtained electronically by any of the following three methods:

To access your grades through the My Gateway system, you must know your Gateway ID and password. You can look up your Gateway ID online at: <http://gatewayid.umsl.edu>. Call the Technology Support Center at (314) 516-6034 if you have any questions about your Gateway ID or password.

To access your grades through STAR or TRAIN you must know your student number and personal identification number (PIN). If you need assistance with your PIN, you should come to the Office of the Registrar, at 351 Millennium Student Center with photo identification. For security reasons, you cannot obtain or change your PIN over the telephone.

A printed copy of your grade report can be sent to you upon request at no charge. Once requested by you, your grade report will be mailed to your official address of record. Requests may be made by phone, mail, e-mail, fax, or in person.

Education majors

Professional education courses must be completed with a grade point average of 2.50 and no grade lower than a C (2.0). A C- grade is not acceptable.

Delayed Grade

A student whose work is incomplete at the end of any semester and who has, in the instructor's judgment, sufficient reasons for failing to complete the work, may, with the approval of the instructor and department chairperson, be assigned a delayed grade. Such work must be made up no later than one semester after the incomplete grade is given, or the grade automatically becomes F. The dean may, in unusual circumstances, extend this time limitation (summer session is not counted as a semester). Notice of change in a delayed grade shall be given to the registrar on a special form.

Y Grade

When, in the instructor's judgment, there is no basis for evaluating the work of a student who does not officially drop a course or officially withdraw from the university, a mark of Y (unauthorized withdrawal--no basis for evaluation) is given.

Examinations

Examinations may be given only at regular class meeting times or as designated by the Senate Committee on Curriculum and Instruction.

Final Examinations

The period designated for final examinations is an important component of the academic term. It provides faculty with a final opportunity to evaluate student

learning and attainment of course objectives. Faculty members are encouraged to meet with students during the final examination period.

1. A faculty member who gives an in-class final examination may give this examination only on the day and at the time designated in the official final examination schedule. A majority vote of the students to the contrary does not change this policy.
2. A student may submit a written request for a change in the scheduled time of the final examination for a limited number of documented hardship reasons. These reasons include, but are not limited to, being scheduled to take more than two examinations on the same day, illness, military obligations, and religious practices. Except for emergencies, this request should be presented directly to the instructor at least two weeks before classes conclude. The student may forward denied requests to the chairperson/area coordinator/program director and, if denied to the dean of the school or college sponsoring the course for additional consideration.

Satisfactory/Unsatisfactory Option

Undergraduate students may take up to 18 credit hours on a satisfactory/unsatisfactory (S/U) grading basis. This includes courses taken as electives or those which satisfy the general education requirements. Most courses required for a specific degree may not be taken on a satisfactory/unsatisfactory basis. Academic departments may designate other courses within their jurisdiction which may not be taken under the option.

A satisfactory grade "S" is recorded when an instructor assigns the grade of A, A-, B+, B-, C+, or C-, and has no numerical value in computing one's cumulative grade point average; however, it does satisfy credit-hour graduation requirements. An unsatisfactory grade "U" is recorded when an instructor assigns the grades of D+, D, D-, or F. Grades will be recorded on transcripts as S or U.

Students register for courses in the normal manner and may exercise the satisfactory/unsatisfactory option before the end of the first four weeks of a regular semester (or the first two weeks of a summer session). Requests for this option are made through the proper dean's office. Instructors are not informed of students taking courses on a satisfactory/unsatisfactory basis.

Audit has no numerical value in computing one's cumulative grade point average, nor does it satisfy any credit-hour graduation requirements.

Repeating Courses

Students may not repeat for grade point average or credit hour purposes courses in which grades of A, A-, B+, B, B-,

C+, C, or C- have been earned. All grades earned will affect the calculation of one's cumulative grade point average; the course hours, however, will be counted only once in calculating hours towards one's degree. (See Grade Modification.)

Grade Modification

When the grade received in an initial attempt in a course at UM-St. Louis is a D+, D, D-, or F, the grade may be replaced in the calculation of the GPA by the grade received in a second or subsequent attempt of the same course at UM-St. Louis. All grades received in second and subsequent attempts will be included in GPA calculations. A maximum of 15 hours may be dropped from the calculation of the student's GPA. All attempts of a given course will appear on the official transcript with the grade(s) earned. The transcript will have an explanation which states that the GPA is calculated using all grades earned in a course except the initial attempt when a course has been repeated and grade modified.

Note: Grade modification is not automatic. After completing the second or subsequent attempt of the course to be modified, students must process the necessary paperwork with an academic adviser in the academic unit in which the student is currently enrolled.

Transcripts

The registrar will furnish transcripts to a student upon written request. Transcripts are furnished to students' parents or guardians or other parties or institutions only if students have filed written consent with the Registrar's office. There is a charge for each transcript. Requests for transcripts by organizations either financially supporting a student or with fee compensation programs are not honored unless the student has filed a consent form with the Registrar's Office authorizing the release of such information.

Transcripts are not issued to or for students who have financial obligations to the university until those obligations are paid in full.

Enrollment Policies

Prerequisites for a Course

A minimum grade of C- is required to meet the prerequisite requirements of any course, except with the permission of the department in which the second course is taught. An "academic standing" prerequisite stated by class--for example, "senior standing"-- means senior-class standing. Requirements for class standing vary. Students should determine the requirements for their school or college. Individual course restrictions are specified in the individual course descriptions.

Course Load

A normal full-time semester work load is 15 hours. Six hours is normal for the summer session. Minimum

full-time enrollment is 12 hours. Students who have demonstrated the ability to carry more than 17 hours successfully may enroll for additional hours with the approval of their dean.

Attendance

Students are expected to attend class regularly, and, in accordance with the UM-St. Louis Bylaws, faculty may establish penalties for excessive absences. Students absent for more than three successive classes may be reported to the dean. Students should tell their divisional dean's office of an extended absence. An absence known in advance should be reported to the instructors of courses that will be missed. Makeup of examinations or work missed is allowed at the instructor's discretion. Students excused from class for valid reasons by their deans shall be permitted, if possible, to make up work missed; the dean must have notified the instructor in writing.

Dropping/Adding Courses

To add courses to their original enrollment, students must get approval from their advisers. Students may not enter courses after the first week of a regular semester or the first three days of the summer session. Courses may be dropped, without approval, through the fourth week of a regular semester and the second week of a summer session. Students may withdraw from courses without a grade up to the end of the fourth week of a regular semester and the second week of the summer session.

From the fifth through the twelfth weeks of the fall or winter semesters (for summer session, the third through the sixth weeks), students may withdraw from a course with an "Excused" grade, providing they are passing the course and receive the approval of their instructor, adviser, and dean's office representative. Otherwise, a failing grade is given. Students not attending classes who fail to drop officially receive F or Y grades. After the allowable period, "Excused" grades are given only in exceptional instances where the instructor's approval and dean's approval are given. These grades are recorded on the students' official records at the end of the term. If an F grade is recorded, it is counted in computing the grade point average. No partial credit is granted to students who withdraw from a course during any semester or otherwise fail to complete the work required for full course credit.

Section Changing

Section changing is normally done during the first week of a regular semester and the first three days of a summer session. No approvals need be received during this time. However, after the first week of a regular semester and the first three days of a summer session, a section change form must be obtained from the departmental or dean's office. The signatures of the instructor teaching the new section is required. The form is to be submitted to the Registration Office, 351 Millennium Student Center.

Change of Major

To change academic majors, students should consult their adviser and the dean's office. Students admitted to one college or school may pursue work in others under the conditions set forth by the other division's faculty. The chairperson of a student's major department shall determine which courses in other colleges or schools, or even other institutions, shall apply as credit toward the degree.

Students who wish to change a major must submit a change of major form. These forms may be obtained in Center for Student Success, 225 Millennium Student Center, the departmental office, or the Registrar's Office.

Withdrawal after Classes Begin

After classes begin, students may withdraw from the university by completing the withdrawal form, available in the dean's office. During the first four weeks of a regular semester and the first two weeks of a summer session, students may withdraw from the university without receiving grades. After this period, grades of F or "Excused" are issued, based on whether the student is passing or failing. After the regular semester's twelfth week (or the sixth week in the summer session), "Excused" grades are given only in exceptional instances with the instructor's and the dean's approvals. These grades are recorded on the student's official record at the end of the term. An F grade is counted in computing the grade point average. No partial credit is granted to students who withdraw from school during any semester or otherwise fail to complete the work required for full course credit. Students who stop attending classes without withdrawing officially from the university are issued an F or a Y grade. Any F grades are counted in computing grade point averages.

Academic Probation, Suspension, and Dismissal

A student may be placed on academic probation any time that his or her cumulative GPA falls below a 2.00. Students should consult college or school advisers in their respective dean's office for additional information.

Students may be suspended if they do not pass more than two-thirds of their work, their semester grade point average is below 1.5, or their cumulative grade point average falls below 1.75. Students may be suspended if they have been on scholastic probation for two or more semesters, not necessarily consecutive, and again become subject to probation. The dean may retain students on probation rather than suspend them if circumstances justify such action.

Students who have once been suspended may be dismissed if they again become subject to suspension. Students placed on probation because of poor scholastic records at other institutions are regarded as having been once suspended under these rules. Normally, students who have

been dismissed are not considered for readmission. In certain unusual cases, students may be readmitted on probationary status after one year.

Students admitted on probation to the summer session must enroll for at least six academic hours. If they receive any grades below C, their work will be reviewed by the college or school dean or appropriate committee to determine eligibility to reenroll. Students enrolled in the summer session whose grade point averages are below 1.5 may have their work reviewed. Students suspended or dismissed from one school or college shall not be admitted to any other school or college until they are eligible for readmission to the original college or school, unless they obtain the consent of the school's or college's dean or appropriate committee. In this event, the dean or committee shall file a written statement for the student's official records, stating the reasons for the decision.

Academic Dishonesty

Academic dishonesty is a serious offense which may lead to probation, suspension, or expulsion. One form of academic dishonesty is plagiarism--the use of an author's ideas, statements, or approaches without crediting the source. Academic dishonesty also includes such acts as cheating by copying information from another student's examination, take-home test, or laboratory manual. The code of student conduct is in the back of this *Bulletin* and is also available in the *UM-St. Louis Student Handbook*, available from the Office of the Vice Chancellor for Student Affairs.

Honor Statement

The University of Missouri-St. Louis encourages students to pursue excellence within a respectful and collegial environment and to assume responsibility for the consequences of personal actions. For that reason the University requires students to reject any type of dishonest behavior.

Honesty precludes seeking, providing, or receiving any form of unauthorized assistance on tests or any type of assignment. It requires giving credit through appropriate citation to the author of materials used in written or oral assignments.

The full Student Standard of Conduct is found at <http://system.missouri.edu:80/uminfo/rules/programs/200010.htm>. By registering for a class at UM-St. Louis, students agree to follow this standard of integrity.

Confidentiality Policy

These statements are set forth as guidelines and procedures to implement the University of Missouri policy on student records developed from The Family Educational Rights and Privacy Act of 1974.

The University of Missouri-St. Louis as charged in the act will annually inform its eligible students by including in

the *Student Handbook*, the *Schedule of Courses*, the *UM-St. Louis Bulletin*, and the *Current* (student newspaper) the following information:

1. "Education Records" are those records, files, documents, and other materials which contain information directly related to a student and are maintained by the university. Those records, made available under The Family Educational Rights and Privacy Act of 1974, are student financial aid, the student's cumulative advisement file, student health records, disciplinary records, admissions file, and academic record. Confidential letters and statements of recommendation which were placed in student credential folders at the Office of Career Placement Services after January 1, 1975, are also made available, if the student has not waived the right to view these recommendations.

The University of Missouri-St. Louis "Education Records" do not include:

- Records of instructional, supervisor, and administrative personnel and educational personnel ancillary thereto which are in the sole possession of the maker thereof and which are not accessible or revealed to any other person except a substitute.
- Records of the University of Missouri Police Department which were created for a law enforcement purpose and are maintained by the police department.
- In the case of persons who are employed by the university but who are not in attendance at the university, records made and maintained in the normal course of business which related exclusively to such persons and that person's capacity as an employee where the records are not available for any other purpose.
- All records on any university student which are created and maintained by a physician, psychiatrist, psychologist, or other recognized professional or paraprofessional acting in his professional or paraprofessional capacity, or assisting in that capacity, and which are created, maintained, or used only in connection with the provision of treatment to the student, and are not available to anyone other than persons providing such treatment, provided, however, that such records can be personally reviewed by a physician or other appropriate professional of the student's choice.

2. The University of Missouri-St. Louis recognizes "Directory Information/Public Information" to mean a student's name, address, telephone listing, date and place of birth, e-mail, enrollment status, current level, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, and the most recent previous educational agency or institution attended by the student. All students must inform the Office of the Registrar before the end of the two-week period following the first day of classes that any or all of the information designated as directory

information should not be released without the student's prior consent. The information listed above will become directory information or public information as of the first day of classes following the end of the two-week period in a regular semester and the first day of classes following the end of the one-week period during the summer session.

3. University of Missouri-St. Louis students have access to the educational records identified in Paragraph 1 above. In accordance with Public Law 93-380 as amended, the University of Missouri-St. Louis will not make available to students the following materials:

- Financial records of the parents of students or any information contained therein.
- Confidential letters and statements of recommendation which were placed in the education records prior to January 1, 1975, if such letters or statements are not used for the purpose other than those for which they were specifically intended.
- Confidential recommendations respecting admission to the university, application for employment and receipt of honor, or honorary recognition, where the student has signed a waiver of the student's rights of access as provided in 6.0404, the University Policy on Student Records.

4. The director of Financial Aid, the appropriate academic dean, the coordinator of the Student Health Service, the Vice Provost for Student Affairs, the Director of Career Placement Services, the Director of Admissions, and the Registrar are the officials responsible for the maintenance of each type of record listed in Paragraph 1.

5. Any student may, upon request, review his or her records and, if inaccurate information is included, may request the expunging of such information from the file. Such inaccurate information will then be expunged upon authorization of the official responsible for the file.

6. Students desiring to challenge the content of their record may request an opportunity for a hearing to challenge the content of the educational record in order to ensure that the record is not inaccurate, misleading, or otherwise in violation of the privacy or other rights of the student, to provide an opportunity for the correction or deletion of any such inaccurate, misleading, or otherwise inappropriate data contained therein, and to insert into such records a written explanation respecting the content of such records.

7. The university official charged with custody of the records will attempt to settle informally any disputes with any student regarding the content of the university's educational records through informal meetings and discussions with the student.

8. Upon request of the student or the university official charged with custody of the records of the student, a formal hearing shall be conducted as follows:

- The request for a hearing shall be submitted in writing to the campus chancellor who will appoint a hearing officer or a hearing committee to conduct the hearing.
- The hearing shall be conducted and decided within a reasonable period of time following the request for a hearing. The parties will be entitled to written notice 10 days prior to the time and place of the hearing.
- The hearing shall be conducted and the decision rendered by an appointed hearing official or officials who shall not have a direct interest in the outcome of the hearing.
- The student shall be afforded a full and fair opportunity to present evidence relevant to the hearing.
- The decision shall be rendered in writing within a reasonable period of time after the conclusion of the hearing.
- Either party may appeal the decision of the hearing official or officials to the campus chancellor. Appeal from the Chancellor's decision is to the President. Appeal from the President is to the Board of Curators.

9. The University of Missouri-St. Louis will not mail grade reports to parents unless the student in question has completed the necessary authorization in the registrar's office.

10. The University of Missouri-St. Louis may permit access to or release of the educational records without the written consent of the student to the parents of a dependent student as defined in Section 152 of the Internal Revenue Code of 1954.

11. If any material or document in the educational record of a student includes information on more than one student, the student may inspect and review only such part of such material or document as relates to him or her or to be informed of the specific information contained in such part of such material.

Honor Societies

The following is a list of honor societies at the University of Missouri-St. Louis:

- Alpha Epsilon Rho* (Communication)
- Alpha Mu Alpha* (College of Business Administration-Marketing)
- Alpha Mu Gamma* (Foreign Languages and Literatures)
- Alpha Phi Sigma* (Criminology and Criminal Justice)
- Alpha Sigma Lambda*
- Beta Alpha Psi* (College of Business Administration, Accounting Majors)
- Beta Beta Beta* (Biology)
- Beta Gamma Sigma* (College of Business Administration)
- Beta Sigma Kappa* (College of Optometry)
- Chi Sigma Iota* (Counseling and Family Therapy)
- Financial Management Association* (College of Business Administration)
- Golden Key National Honour Society* (Campus-wide)
- Kappa Delta Pi* (College of Education)

- Lambda Alpha* (Anthropology)
- Omicron Delta Epsilon* (Economics)
- Phi Alpha* (Social Work)
- Phi Alpha Theta* (History)
- Phi Kappa Phi* (Interdisciplinary)
- Pi Alpha Alpha* (Public Policy Administration)
- Pi Sigma Alpha* (Political Science)
- Psi Chi* (Psychology)
- Sigma Delta Pi* (Spanish)
- Sigma Iota Rho* (International Studies)
- Sigma Tau Delta* (English)
- Sigma Theta Tau* (Nursing)

Dean's List

At the end of each semester the College of Arts and Sciences, College of Business Administration, College of Education, College of Fine Arts and Communication, and College of Nursing send letters of commendation to undergraduates completing at least nine hours of graded courses with grade point averages of 3.2 or above for the semester. In addition, each college and school, on an annual basis, sends letters of commendation to part-time undergraduate students who have earned a 3.2 grade point average or above in at least nine but not more than 17 graded hours during the fall and winter semesters combined.

Who's Who Among Students in American Universities and Colleges

Eligible students may be nominated to *Who's Who Among Students in American Universities and Colleges* by students (themselves or others), faculty members, or administrators. Nominees are selected on the basis of scholastic ability, participation and leadership in academic and extracurricular activities, service to the university, and a promise for future usefulness. Nomination forms and further information may be obtained in room 366 Millennium Student Center or by visiting the Who's Who Web site at <http://www.umsl.edu/services/stuactv>.

Latin Honors

To graduate with Latin honors, (students must have attended UM-St. Louis for at least 56 graded hours) and must meet the following qualifications: cum laude 3.2 to 3.49 grade point average; magna cum laude 3.5 to 3.79 grade point average; summa cum laude 3.8 to 4.0 grade point average. If a student has the necessary GPA at UM-St. Louis to qualify for Latin honors but has fewer than 56 graded hours at UM-St. Louis, all credit hours and the associated grades earned within the UM System will be included when the total credit hours earned in the UM System are at least 80 graded hours. In determining one's eligibility for Latin honors, all graded hours will be considered, including the original grade in each grade-modified course. No Latin honor higher than that which is consistent with the UM-St. Louis grade point average will be awarded. All honors must be recommended by the student's major department. (Effective April 2000.)

Office of National Scholarship Information

The mission of the Office of National Scholarship Information (ONSI) at the University of Missouri-St Louis is to provide campus wide access to merit-based scholarship information and opportunities. The most well-known of these merit-based scholarships include the Rhodes, British Marshall, Goldwater, Udall, Truman, and Fulbright, although numerous other prestigious, and often unique, opportunities exist for outstanding students. For further information, contact the Honors College at (314) 516-5243.

Fees for Undergraduate Study

Detailed information regarding current fees and residency regulations is furnished in the *Schedule of Courses* on the registrar's Web site:
<http://www.umsl.edu/services/financial/feeinfo.htm>.

The University reserves the right to modify by increase or decrease the fees charged for attendance and other services at the University, including but not limited to educational fees, at any time when in the discretion of the governing board the same is in the best interest of the University, provided that no increases can or will be effective unless approved by the governing board not less than thirty (30) days prior to the beginning of the academic term (semester, etc.) to which the fees are applicable, with all modification of fees to be effective irrespective as to whether fees have or have not been paid by or on behalf of a student prior to the effective date of the modification..

Payment of Fees

All fees are due and payable on or before the beginning of class, the first payment due date after registering for classes. A minimum payment option is available for students unable to complete their financial arrangements at the time of registration. A finance charge will be assessed on the unpaid balance of all students at the rate of 1% per month. Student accounts will be subject to a late fee of \$10.00 when payment is not received and processed by the scheduled due date. All accounts will be billed using this method; therefore, it is NOT necessary that a student choose the minimum payment plan at the time the charges are incurred. Students with delinquent accounts will NOT be allowed to register in subsequent semesters.

Credit Cards

Valid MasterCard and Discover are accepted toward payment of fees only online at <http://ebill.umsl.edu>. There is a 2.75% service charge for paying by credit card.

Personal Checks

Personal checks in payment of fees and other obligations to the University will be accepted in the Cashiers Office and online only when the amount of the check does not exceed the amount due from the student. Any checks payable to the university which are returned unpaid will be assessed a \$20 return check fee.

Quick and Easy Ways To Pay Fees

- By Mail using the mail in coupon and envelope provided with your monthly statement.
- Online using MasterCard, Discover, or personal checking account. A 2.75% service charge will be assessed to those making payment online by credit card.
- In Person at one of the service windows at the Cashier's Office.
- Debit cards may be used in the Cashier's Office. This is a PIN based transaction.

Nonresident Student Fees

A student admitted to the University as a nonresident is subject to the Nonresident Educational Fee as well as all other required fees. The Missouri resident fact sheet, Residence and Educational Fees Rules, and the petition for Missouri Resident Status are available at www.umsl.edu/services/financial/feeinfo.htm. All questions should be directed to the Office of Admissions at (314) 516-5451.

Metropolitan Fee Plan

The Board of Curators of the University of Missouri approved a Metropolitan Fee Plan for undergraduate students that grants in-state resident fee status to residents of Jersey, Madison, Monroe, and St. Clair counties in Illinois.

If you have questions, please call (toll-free in the Illinois 618 area code) at 1-888-GO.2.UMSL (462-8675) or at 314-516-UMSL.

Fee Reassessment for Dropping Classes or Withdrawal From School

Fees may be reassessed for students who officially withdraw from the University or who drop classes. It is a student's responsibility to formally notify the Registrar's Office and to follow proper procedures when withdrawing from the University. Withdrawing from or refusing financial aid does not constitute an official withdrawal from the University. Likewise, failing to attend class does not in and of itself, mean a student has dropped a class. Please refer to the appropriate sections in this publication for specific information about these procedures.

From the standpoint of fee reassessment, it is in the student's best interest to formally drop a class during the 100 percent refund period to avoid

higher cost implications later. Reassessments are based on the total cost of the class(es), not just the amount paid thus far. This is necessary because the university commits resources to students when they are registered and the space reserved could have gone to another student.

Fees included in the reassessment are the Educational Fee, Student Activity Fee, Instructional Computing Fee, Special Course Fee (if applicable), and Parking Fee (if applicable).

Such fees are reassessed and reduced according to the schedule published in the *Schedule of Courses* published each semester.

Policy on Administrative Cancellation of Student Registration for Nonpayment of Educational Fees:

A registered student is required to remit payment of assessed fees by deadlines that are announced each semester. The University will cancel the registrations in all courses of students from whom the University has not received and processed either the full payment or the required minimum payment (a stipulated portion of the balance due after deducting approved financial aid) for assessed fees by announced deadlines.

Policies and Procedures Related to Cancellation of Student Registration

- The University will make efforts to notify any student whose registration is about to be administratively cancelled prior to taking this action.
- On or before the last day on which a student may enroll in a course, a cancelled student's space in a course will be given to other students on that course's wait lists. The cancelled student will be placed at the end of the course wait list.
- Any student who has been administratively cancelled for nonpayment of assessed fees may not enroll in a class unless the required fees have been paid.
- Cancelled students who re-register on or after the first day of the semester will be assessed a nonrefundable late registration charge.
- Once a student's registration has been administratively cancelled for nonpayment of assessed fees, that student may not attend class unless s/he has officially re-registered.

Refund of Fees

All refunds are made by mail or direct transfer to your bank and require two to four weeks processing time after withdrawal or dropped classes. Deductions will be made for any financial obligation due the University of Missouri-St. Louis.

Delinquent Indebtedness

All delinquent indebtedness to the university must be cleared before transcripts or diplomas will be released, or before registration in subsequent semesters. The university will pursue any and all collection efforts and practices including referring the account to a collection agency and reporting to a credit bureau. The account could be assessed an additional collection charge up to 50 percent of the balance when it is referred to a collection agency.

Other Fees

Laboratory Breakage Fee

Breakage or loss of laboratory equipment due to personal negligence on the part of the student shall be assessed against the student when the actual value of the supplies exceeds \$1.00. The amount of the charge shall be determined by the department chairperson.

Room and Board

The university offers many different room and board plans. The average total cost for the residence hall is \$5,400 for a nine-month contract. For more information contact the Office of Residential Life, Provencial House, Villa 101 at (314) 516-6877.

Student Insurance: International Students (required)

International students in F-1 and J-1 status are required to purchase the health insurance policy offered through the university. Information regarding waivers, premiums, and coverage is available through the Office of International Student and Scholar Services.

Student Insurance (optional)

An Accident and Sickness Insurance plan is available to students and their dependents. Information concerning premiums and coverage is available upon request from University Health Services located at 131 Millennium Student Health Center.

General Education Requirements

Students must successfully complete the general requirements of the university, the school or college in which they are enrolled, and the specific requirements of their area of specialization. Described below are the general education requirements for all degrees.

The University of Missouri-St. Louis General Education Program was approved by the Faculty Senate April 23, 2002. This program affords both native and transfer students attending our university the opportunity to develop and use intellectual tools and to acquire a breadth of knowledge necessary in our challenging, technological, and diverse world. This program challenges students to investigate various disciplines as potential majors and to develop environments, and it prepares them for success in major fields of study. The program complies fully with the Missouri Coordinating Board of Higher Education Guidelines on Transfer and Articulation (June 2000).

General Education Requirements (Effective Fall, 2002)

Application of Policy to Freshmen

Freshmen who enrolled at UM-St. Louis or at any other accredited post-secondary institution in fall 2002, and all future freshmen, must complete the requirements of the General Education Plan in order to earn a baccalaureate degree from the University of Missouri-St. Louis. For purposes of this policy, a freshman is defined as any student who has completed less than 24 semester hours of credit* prior to the start of the fall 2002 semester.

**Only credit that is transferable to UM-St. Louis is applicable. For purposes of implementing the general education plan at UM-St. Louis, the phrase "credit that is transferable" shall be interpreted to mean all credit associated with coursework completed with a grade of D- or better at a regionally accredited post-secondary institution (or an approved foreign college or university). Credit associated with military science and developmental/remedial coursework shall be excluded from this understanding of "credit that is transferable".*

Application of Policy to Others

Students who have earned 24 or more semester hours of credit* at any accredited post-secondary institutions(s) before the start of the fall 2002 semester must meet the general education requirements stipulated in the UM-St Louis 2001-2002 Bulletin. However, such students may elect to complete the new General Education Plan described below that became effective in the fall semester of 2002.

**Only credit that is transferable to UM-St. Louis is applicable*

SKILL GOALS:

Communicating Skills (minimum 2 three-hour courses or 6 hrs) [C]

Managing Information Skills (min. 1 course or 3 hrs) [MI]

Valuing Skills (min. 1 course or 3 hrs) [V]

KNOWLEDGE GOALS:

Social and Behavioral Sciences Knowledge Goal (min. 3 three-hour courses or 9 hours minimum) [SS]

Humanities and Fine Arts Knowledge Goal (min. 3 three-hour courses or 9 hours minimum) [H]

Mathematics and Life/Natural Sciences (min. 4 three-hour courses or 12 hours minimum) [MS]

Students may take only those courses listed below for the 42-hour General Education block. **Many courses satisfy more than one goal, are designated as such, and may be counted for all of the goals listed for each specific course.** Select courses that concentrate fully on a skill goal(s) but no knowledge goals have been marked with an asterisk, and it should be noted that those courses concentrate on the designated skill comprehensively.

Once students have met the required number of courses or hours under each goal, they may take any of the certified General Education courses listed under any of the goals to achieve the 42-hour program. This offers them the opportunity to use the General Education program to meet their individual needs and interests. **Students may not take any upper-level courses or any lower-level courses that do not appear on the list of certified General Education courses to complete the 42-hour block.**

Transfer students entering UM-St. Louis may transfer a CBHE approved 42-hour block of General Education courses, in accordance with the CBHE Transfer and Articulation agreement. However, those students transferring with fewer than 42 hours or from a non-participating institution will have their transcripts evaluated on a course-by-course basis.

The new General Education Program of the University of Missouri-St. Louis offers students an exciting and challenging program that develops the skills and knowledge necessary to succeed in today's changing world. The following information outlines each of the six goals and the courses that meet the competencies students must achieve to accomplish the designated skills and knowledge goals. The program also allows for individual choices in disciplines and skills to assist the students in their undergraduate endeavors at UM-St. Louis.

GENERAL EDUCATION GOALS AND COURSES

PLEASE NOTE:

* Course addresses skill goal(s) and **no** knowledge goals. The course covers the skill goal comprehensively and is suggested for those students who seek an in-depth coverage of that skill.

**Course will count for Cultural Diversity Graduation Requirement.

***Course will count for State Government/History Requirement (Honors students should check with Honors College each semester for list of Gen. Ed. Courses that meets this requirement). **ALL COURSES ARE THREE-HOUR COURSES UNLESS OTHERWISE NOTED.**

GOALS:

SKILL GOALS:

COMMUNICATING (min. 2 courses or 6 hrs)

MANAGING INFORMATION (min. 1 course or 3 hrs)

VALUING (min. 1 course or 3 hrs)

KNOWLEDGE GOALS:

SOCIAL AND BEHAVIORAL SCIENCES (min. 3 three-hour courses or 9 hr)

HUMANITIES AND FINE ARTS (min. 3 three-hour courses or 9 hrs)

MATHEMATICS AND LIFE/NATURAL SCIENCES (min. 4 three-hour courses or 12 hrs)

GOAL # 1 COMMUNICATING SKILLS

The Communicating Skills Goal develops students' effective use of the English language and quantitative and other symbolic systems essential to their success in school and in the world. Students should be able to read and listen critically and to write and speak with thoughtfulness, clarity, coherence, and persuasiveness (CBHE General Education, June 2000).

Students must complete a minimum of two courses or six hours in the Communicating Skills area including a freshman composition course (English 1100, 1110 or Honors 1200) and one other course taken from the following list:

*comprehensive coverage of skill goal

** satisfies cultural diversity requirement

***satisfies state government requirement

Department, Course # Course Title

English 1100 or	Freshman Composition*
English 1110 or	Freshman Composition for International Students*
Honors 1111	Western Cultural Traditions and Critical Thinking
Honors 1200	Freshman Composition for Honors Students

Select a minimum of one course:

Art History 1175	Arts and Ideas
Communication 1030	Interpersonal Communication*
Communication 1040	Introduction to Public Speaking*
Communication 1050	Introduction to Mass Media
Biology 1102	Human Biology
Chemistry 2223	Quantitative Analysis
Chemistry 2633 (2 hrs)	Organic Chemistry Laboratory
English 1120	Literary Types
English 1130	Topics in Literature
English 1170	American Literary Masterpieces
English 1200	Myth
English 1700	African-American Literature

English 1710	Native American Literature
English 2030	Poetry Writing
English 2040	Short Story Writing
English 2050	Play Writing
English 2120	Topics in Writing
English 2200	Classical Literature in Translation*
English 2230	Jewish Literature
English 2240	Literature of the New Testament 5
English 2250	Literature of the Old Testament
English 2310	English Literature I
English 2320	English Literature II
English 2330	Introduction to Poetry
English 2350	Introduction to Fiction
English 2710	American Literature I
English 2720	American Literature II
English 2810	Traditional Grammar*
French 2102	Intermediate French Language and Culture II
French 2180	Readings in French
German 2170	German Composition and Conversation
German 2180	Readings in German
History 1001	American Civilization to 1865***
History 1002	American Civilization 1865 to Present***
History 1004	The History of Women in the United States***
History 1030	The Ancient World
History 1031	Topics in European Civilization to 1715
History 1032	Topics in European Civilization since 1715
History 1051	Latin American Civilization**
History 1052	Mexican Civilization**
History 1061	African Civilization To 1800**
History 1062	African Civilization Since 1800**
History 1063	African Diaspora To 1800**
History 1064	African Diaspora Since 1800**
Honors 1110	Honors Western Traditions: Humanities
Honors 1130	Honors Western Traditions: Social & Behavioral Sciences
Honors 1210	Honors American Traditions-Humanities
Honors 1300	Honors Critical Analysis
Honors 1330	Honors Non-Western Traditions
Honors 1410	Freshman Seminar in Humanities
Honors 1900	Independent Cross-Cultural Readings
Honors 2010	Honors Inquiries in the Humanities
Honors 2020	Honors Inquiries in the Fine Arts
Honors 2030	Honors Inquiries in the Social and Behavioral Science.
Honors 2050	Honors Inquiries in Natural Sciences
Japanese 3201	Intermediate Japanese III **
Media Studies 1135	Media Theory
Media Studies 2218	Public Policy in Telecommunication
Music History & Literature 1175	Arts and ideas
Spanish 2171	Spanish Conversation and Pronunciation
Spanish 2172	Spanish Composition
Spanish 2180	Readings in Spanish**
Theatre & Dance 1100	Introduction to Dance
Theatre & Dance 1210	Fundamentals of Acting
Theatre & Dance 1800	Introduction to Theatre
Theatre & Dance 1850	Introduction to Non-Western
Theatre & Dance 2105	Script Analysis
Theatre & Dance 2211	Acting Styles
Theatre & Dance 2230	Aesthetics of Theatrical Styles
Theatre & Dance 2810	History of World Theatre and Drama Through the Restoration

GOAL # 2 MANAGING INFORMATION SKILLS

The Managing Information Skills Goal develops students' abilities to locate, organize, store, retrieve, evaluate, synthesize and annotate information from print, electronic, and other sources in preparation for solving problems and making informed decisions (CBHE General Education, June 2000).

Students must complete a minimum of one course or three hours in the Managing Information Skills area taken from the following list:

*comprehensive coverage of the skill goal

**satisfies cultural diversity requirement

***satisfies state government requirement

Department, Course # Course Title

Computer Science 1010	Introduction to Computers (credit not granted for both CS 1010 and BA 1800)*
Business	
Administration. 1800	Computers and Information Systems (credit not granted for both BA 1800 and CS 1010)*
Anthropology 1005	Introduction to Biological Anthropology
Anthropology 1006	Introduction to Non-Human Primates
Anthropology 1019	Introduction to Archaeology**
Anthropology 1033	World Archaeology**
Anthropology 2105	Human Variation**
Art History 1104	Indigenous Arts of North America**
Art History 2212	Greek Art and Archaeology
Art History 2213	Roman Art and Archaeology
Art History 2214	Early Christian and Byzantine Art
Art History 2225	Medieval Art
Art History 2237	Northern European Renaissance Art
Art History 2238	Italian Renaissance Art
Art History 2240	French Art and Architecture 1400-1715
Art History 2245	Baroque Art and Architecture
Art History 2250	Nineteenth Century European Art
Art History 2265	History of Photography
Art History 2270	American Art to 1876
Art History 2272	American Art since 1876
Art History 2279	American Architecture
Art History 2281	Art since 1960
Astronomy 1001	Cosmic Evolution/Introductory
Astronomy 1001	Atmospheric Science Elementary Meteorology
Biology 1202	Environmental Biology
Biology 1811	Introduction to Biology I: From Molecules to Organisms
Biology 1821	Introduction to Biology II: Organisms and the Environment*
Chemistry 1011	Chemistry in the Environment and Everyday Living
Chemistry 1052	Chemistry for the Health Professions
Chemistry 1062	Organic and Biochemistry for Health Professions
Chemistry 1082	General Chemistry I
Chemistry 1091	General Chemistry II
Chemistry 1121	Introductory Chemistry II
Chemistry 2223	Quantitative Analysis
Chemistry 2412	Basic Inorganic Chemistry
Chemistry 2622	Organic Chemistry II
Chemistry 2633	Organic Chemistry Laboratory
Criminology &	
Criminal Justice 1100	Introduction to Criminology & Criminal Justice
Criminology &	
Criminal Justice 1200	Foundations of Law (Pol.Sci. 1200)
Economics 2410	The Economics of Women, Men and Work
Economics 2800	History of American Economic Development
English 1100	Freshman Composition

English 1110	Freshman Composition for International Students
Geography 1001	Introduction to Geography
Geology 1001A	General Geology
Geology 1001	General Geology
Geology 1002A	Historical Geology
Geology 1002	Historical Geology
Honors 1200	Freshman Symposium: Cultural Traditions I**
Honors 1310	Non-Western Traditions
Media Studies 2271	History of American Film
Media Studies 2272	Contemporary Cinema
Physics 1011	Basic Physics I
Physics 1012	Basic Physics II
Physics 2111	Physics: Mechanics and Heat
Physics 2112	Physics: Electricity, Magnetism and Optics
Political Science 1200	Foundations of Law (CCJ 1200)
Political Science 1450	Introduction to Labor Studies 4
Political Science 1500	Introduction to Comp. Politics
Political Science 1550	Women and Politics in the Developing World
Political Science 1820	Global Issues
Political Science 1990	The City, (Soc. 1999)
Sociology 1999	The City, (Pol Sci.1990)
Theatre & Dance 2820	The History of World Theatre & Drama from 18 th Century to Contemporary Times
Theatre & Dance 2840	History of Dance to the 19 th Century
Theatre & Dance 2841	History of Dance from 19 th Century to Contemporary Times

GOAL # 3 VALUING SKILL

The Valuing Skills Goal develops students' abilities to understand the moral and ethical values of a diverse society and to understand that many courses of action are guided by value judgments about the way things ought to be. Students should be able to make informed decisions through identifying personal values and the values of others and through understanding how such values develop (CBHE General Education, June 2000).

Students must complete a minimum of one course or three hours in the Valuing Skills area taken from the following list:

**satisfies cultural diversity requirement

***satisfies state government requirement

<u>Department, Course #</u>	<u>Course Title</u>
Anthropology 1011	Introduction to Cultural Anthropology**
Anthropology 1025	World Cultures
Anthropology 2117	Greek History & Culture**
Art History 1104	Indigenous Arts of North America**
Art History 2212	Greek Art and Archaeology
Art History 2213	Roman Art and Archaeology
Art History 2214	Early Christian and Byzantine Art
Art History 2225	Medieval Art
Art History 2237	Northern European Renaissance Art
Art History 2238	Italian Renaissance Art
Art History 2240	French Art and Architecture 1400-1715
Art History 2245	Baroque Art and Architecture
Art History 2250	Nineteenth Century European Art
Art History 2265	History of Photography
Art History 2270	American Art to 1876
Art History 2272	American Art since 1876
Art History 2279	American Architecture
Art History 2281	Art since 1960
Biology 1081	Global Ecology (Pol. Sci. 1850)
Biology 1202	Environmental Biology
Criminology & Criminal Justice 1200	Foundations of Law (Pol. Sci. 1200)
Economics 1000	Introduction to the American Economy

Economics 1001	Principles of Microeconomics
Economics 2610	The Economics of Professional Sports
Economics 2010	The Business Firm: History, Theory and Policy
English 1120	Literary Types
English 1200	Myth
English 2200	Classical Literature in Translation
English 2280	The Contemporary World in Literature**
English 2340	Introduction to Drama
History 1003	African-American History***
Honors 1201	Freshman Symposium: Cultural Traditions II
Honors 1230	American Traditions***
Honors 1310	Non-Western Traditions Series -Humanities
Honors 1330	Non-Western Traditions-Social Sciences
Honors 1430	Freshman Seminar in the Social Sciences
Honors 2310	Cultural Diversity in the Humanities**
Honors 2330	Cultural Diversity in the Social Sciences**
Music History & Literature 1001	Introduction to Music
Music History & Literature 1080	Introduction to Irish Traditional Music
Music History & Literature 1090	Non-Western Music I**
Music History & Literature 1100	Non-Western Music II**
Music History & Literature 1110	Introduction to Irish Traditional Music in North America
Music History & Literature 1190	Fundamentals of Music
Music History & Literature 1301	Theory of Music I
Music History & Literature 1311	Theory of Music II
Music History & Literature 2301	Theory of Music III
Music History & Literature 2311	Theory of Music IV
Philosophy 1090	Telecourse: Philosophy and Other Disciplines
Philosophy 1091	Telecourse: Significant Figures in Philosophy
Philosophy 1110	Western Philosophy I
Philosophy 1111	Western Philosophy II
Philosophy 1120	Asian Philosophy**
Philosophy 1125	Islamic Philosophy**
Philosophy 1130	Approaches to Ethics
Philosophy 1150	Major Questions in Philosophy
Philosophy 1160	Logic and Language
Philosophy 1185	Philosophy of Religion
Philosophy 2252	Philosophical Foundations of Criminal Justice (CCJ 2252)
Philosophy 2253	Philosophy and Feminism
Philosophy 2254	Business Ethics
Philosophy 2256	Bioethics
Philosophy 2258	Medicine, Values and Society
Philosophy 2280	Minds, Brains and Machines
Political Science 1100	Introduction to American Politics***
Political Science 1200	Foundations of Law (CCJ 1200)
Political Science 1500	Introduction to Comparative Politics
Political Science 1550	Women and Politics in the Developing World
Political Science 1800	World Politics
Political Science 1850	Global Ecology (Bio. 1081)
Political Science 1990	The City, Soc.1999

Sociology 1010	Introduction to Sociology
Sociology 1040	Social Problems
Sociology 1999	The City (Pol. Sci.1990)

GOAL # 4 SOCIAL AND BEHAVIORAL SCIENCES KNOWLEDGE

The Social and Behavioral Sciences Knowledge Goal develops students' understanding of themselves and the world around them through the study of content and the processes used by historians and social and behavioral scientists to discover, describe, explain, and predict human behavior and social systems. Students must understand the diversities and complexities of the cultural and social world, past and present, and come to an informed sense of self and others (CBHE General Education, June 2000).

Students must complete a minimum of three courses or nine hours in the Social and Behavioral Sciences Knowledge area taken from the following list:

**satisfies cultural diversity requirement

***satisfies government requirement

Department, Course # Course Title

Anthropology 1006	Introduction to Non-Human Primates
Anthropology 1011	Introduction to Cultural Anthropology**
Anthropology 1019	Introduction to Archaeology **
Anthropology 1025	World Cultures**
Anthropology 1033	World Archaeology**
Anthropology 2105	Human Variation**
Anthropology 2117	Greek History and Culture (same as History 2117)
Biology 1081	Global Ecology
Communication 1050	Introduction to Mass Media
Criminology & Criminal Justice 1150	Violence in America
Criminology & Criminal Justice 1200	Foundations of Law (Pol. Sci. 1200)
Economics 1000	Introduction to the American Economy
Economics 1001	Principles of Microeconomics
Economics 1002	Principles of Macroeconomics
Economics 1500	Entertainment Economics: The Movie Industry
Economics 1510	Entertainment Economics: The Popular Music Industry
Economics 2010	The Business Firm: History, Theory and Policy
Economics 2410	The Economics of Women, Men and Work
Economics 2610	The Economics of Professional Sports
Economics 2800	History of American Economic Development
Geography 1001	Introduction to Geography
Geography 1002	World Regions
History 1001	American Civilization to 1865***
History 1002	American Civilization 1865-Present ***
History 1003	African-American History***
History 1004	The History of Women in the United States***
History 1030	The Ancient World
History 1031	Topics in European Civilization to 1715
History 1032	Topics in European Civilization since 1715
History 1041	East Asian Civilization to 1800**
History 1042	East Asian Civilization from 1800**
History 1051	Latin American Civilization**
History 1052	Mexican Civilization**
History 1061	African Civilization To 1800**
History 1062	African Civilization Since 1800**
History 1063	African Diaspora To 1800**
History 1064	African Diaspora Since 1800**
Honors 1130	Western Traditions--Social Science
Honors 1230	American Traditions***

Honors 1330	Non-Western Traditions--Social Science
Honors 1430	Freshman Seminar in the Social Sciences
Honors 2030	Honors Inquiries in Social and Behavioral Sciences
Honors 2330	Cultural Diversity in the Social Sciences**
Political Science 1100	Introduction to American Politics***
Political Science 1200	Foundations of Law (CCJ 1200)
Political Science 1450	Introduction to Labor Studies
Political Science 1500	Introduction to Comparative Politics
Political Science 1550	Women and Politics in the Developing World
Political Science 1800	World Politics
Political Science 1820	Global Issues
Political Science 1850	Global Ecology (Bio. 1081)
Political Science 1990	The City, Soc. 1999
Psychology 1003	General Psychology
Psychology 1268	Human Growth and Behavior
Sociology 1010	Introduction to Sociology
Sociology 1040	Social Problems
Sociology 1999	The City, Pol. Sci. 1990

GOAL # 5 HUMANITIES AND FINE ARTS KNOWLEDGE

The Humanities and Fine Arts Knowledge Goal develops the students' understanding of the ways in which humans have addressed their condition through imaginative work in the humanities and fine arts; to deepen their understanding of how that imaginative process is informed and limited by social, cultural, linguistic, and historical circumstances; and to appreciate the world of the creative imagination as a form of knowledge (CBHE General Education, June 2000).

Students must complete a minimum of three courses or nine hours from the Humanities and Fine Arts Knowledge area taken from the following list:

**satisfies cultural diversity requirement

<u>Department, Course #</u>	<u>Course Title</u>
Art History 1100	Introduction to Western Art
Art History 1104	Indigenous Arts of North America**
Art History 1105	Introduction to the Arts of Africa
Art History 1108	Introduction to Arts of Asia
Art History 1175	Arts and Ideas
Art History 2211	Art and Archeology of the Ancient World
Art History 2212	Greek Art and Archaeology
Art History 2213	Roman Art and Archaeology
Art History 2214	Early Christian and Byzantine Art
Art History 2225	Medieval Art
Art History 2235	European Art and Architecture 1300-1800
Art History 2237	Northern European Renaissance Art
Art History 2238	Italian Renaissance Art
Art History 2240	French Art and Architecture 1400-1715
Art History 2245	Baroque Art and Architecture
Art History 2250	Nineteenth Century European Art
Art History 2255	Modern Art**
Art History 2265	History of Photography
Art History 2270	American Art to 1876
Art History 2272	American Art since 1876
Art History 2279	American Architecture
Art History 2281	Art since 1960
English 1120	Literary Types
English 1130	Topics in Literature
English 1170	American Literary Masterpieces
English 1175	Arts and Ideas
English 1200	Myth
English 1700	African-American Literature

English 1710	Native American Literature
English 2030	Poetry Writing
English 2040	Short Story Writing
English 2050	Play Writing
English 2120	Topics in Writing
English 2200	Classical Literature in Translation
English 2230	Jewish Literature
English 2240	Literature of the New Testament
English 2250	Literature of the Old Testament
English 2280	The Contemporary World in Literature
English 2310	English Literature I
English 2320	English Literature II
English 2330	Introduction to Poetry
English 2340	Introduction to Drama
English 2350	Introduction to Fiction
English 2710	American Literature I
English 2720	American Literature II
French 2102	Intermediate French Language and Culture II
French 2180	Readings in French
Geography 2105	World Regions
German 2170	German Conversation and Composition
German 2180	Readings in German
Honors 1110	Western Traditions
Honors 1111	Western Cultural Traditions and Critical Thinking
Honors 1200	Freshmen Symposium: Cultural Traditions I
Honors 1201	Freshman Symposium: Cultural Traditions II
Honors 1210	American Traditions in Humanities
Honors 1300	Critical Analysis
Honors 1310	Non-Western Traditions Series Humanities**
Honors 1410	Freshman Seminar in Humanities
Honors 1900	Independent Cross-Cultural Readings
Honors 2010	Inquiries in the Humanities
Honors 2020	Inquiries in the Fine and Performing Arts
Honors 2310	Cultural Diversity in the Humanities**
Japanese 2150	Classical Japanese Literature in Translation
Japanese 3201	Intermediate Japanese III**
Media Studies 2271	History of American Film
Media Studies 2272	Contemporary Cinema
Music History & Literature 1001	Introduction to Music
Music History & Literature 1060	Introduction to African-American Music
Music History & Literature 1070	Introduction to Jazz
Music History & Literature 1080	Introduction to Irish Traditional Music
Music History & Literature 1090	Non-Western Music I
Music History & Literature 1100	Non-Western Music II
Music History & Literature 1110	Introduction to Irish Traditional Music in North America
Music History & Literature 1175	Arts & Ideas
Music History & Literature 1190	Fundamentals of Music
Music History & Literature 1301	Theory of Music I
Music History &	

Literature 1311	Theory of Music II
Music History & Literature 2301	Theory of Music III
Music History & Literature 2311	Theory of Music IV**
Philosophy 1090	Telecourse: Philosophy and Other Disciplines
Philosophy 1091	Telecourse: Significant Figures in Philosophy
Philosophy 1110	Western Philosophy I
Philosophy 1111	Western Philosophy II
Philosophy 1120	Asian Philosophy
Philosophy 1125	Islamic Philosophy
Philosophy 1130	Approaches to Ethics
Philosophy 1150	Major Questions in Philosophy
Philosophy 1160	Logic and Language
Philosophy 1185	Philosophy of Religion
Philosophy 2252	Philosophical Foundations in Criminal Justice (CCJ 2252)
Philosophy 2253	Philosophy and Feminism
Philosophy 2254	Business Ethics
Philosophy 2256	Bioethics
Philosophy 2258	Medicine, Values and Society
Philosophy 2280	Minds, Brains and Machines
Spanish 2171	Spanish Conversation and Pronunciation
Spanish 2172	Spanish Composition
Spanish 2180	Readings in Spanish
Theatre & Dance 1100	Introduction to Dance
Theatre & Dance 1210	Fundamentals of Acting
Theatre & Dance 1800	Introduction to Theatre
Theatre & Dance 1850	Introduction to Non-Western Theatre
Theatre & Dance 2105	Script Analysis
Theatre & Dance 2211	Acting Styles
Theatre & Dance 2230	Aesthetics of Theatrical Styles
Theatre & Dance 2810	History of World Theatre and Drama Through the Restoration
Theatre & Dance 2820	The History of World Theatre & Drama from 18 th Century to Contemporary Times
Theatre & Dance 2840	History of Dance to the 19 th Century
Theatre & Dance 2841	History of Dance from 19 th Century to Contemporary Times

GOAL # 6 MATHEMATICS AND LIFE/NATURAL SCIENCES KNOWLEDGE

The Mathematics and Life/Natural Sciences Knowledge Goal develops students' abilities in the areas of mathematics and sciences. In mathematics, the goal develops the students' understanding of fundamental mathematical concepts and their applications. Students should develop a level of quantitative literacy that would enable them to make decisions and solve problems and which could serve as a basis for continued learning. To meet this goal, students must have one mathematics course that has the same prerequisite(s) and level of rigor as college algebra. In the life and natural sciences, this goal develops the students' understanding of the principles and laboratory procedures of life and physical sciences and to cultivate the abilities to apply the empirical methods of scientific inquiry. Students should understand how scientific discovery changes theoretical views of the world, informs our imaginations, and shapes human history. Students should also understand that science is shaped by historical and social contexts (CBHE General Education, June 2000). Students must complete a minimum of four courses or twelve hours in the Mathematics and Life/Natural Sciences Knowledge area.

Note: All students are required to earn a C- or better in a college-credit mathematics course (Math 1020 or higher meets this requirement at UM-St. Louis), or achieve a score of 26 or higher on the Missouri Math Placement Test. Students should check the current schedule of courses for more details regarding math proficiency and placement.

Department, Course # Course Title

Anthropology 1005 (4)	Introduction to Biological Anthropology
Astronomy 1001 (4 hrs)	Cosmic Evolution/ Introductory Astronomy
Astronomy 1011	Planets and Life in the Universe
Astronomy 1012	The Violent Universe and the New Astronomy
Astronomy 1022 (2 hrs)	Practical Astronomy

Astronomy 1050	Introduction to Astronomy I
Astronomy 1051	Introduction to Astronomy II
Astronomy 1121	The Search for Extraterrestrial Life
Atmospheric Science 1001 (4 hrs)	Elementary Meteorology
Biology 1012	General Biology
Biology 1013 (2 hrs)	General Biology Laboratory
Biology 1081	Global Ecology (Pol. Sci. 1850)
Biology 1102	Human Biology
Biology 1131 (4 hrs)	Human Anatomy and Physiology I
Biology 1141 (4 hrs)	Human Anatomy and Physiology II
Biology 1162	General Microbiology
Biology 1202	Environmental Biology
Biology 1811 (5 hrs)	Introductory Biology I: From Molecules to Organisms
Biology 1821 (5 hrs)	Introductory Biology II: Organisms and the Environment
Chemistry 1011	Chemistry in the Environment and Everyday Living
Chemistry 1052 (4 hrs)	Chemistry for Health Professions
Chemistry 1062 (2 hrs)	Organic and Biochemistry for Health Professions
Chemistry 1082	General Chemistry I
Chemistry 1091	General Chemistry II
Chemistry 1111 (5 hrs)	Introductory Chemistry I
Chemistry 1121 (5 hrs)	Introductory Chemistry II
Chemistry 2223	Quantitative Analysis
Chemistry 2412	Basic Inorganic Chemistry
Chemistry 2621	Organic Chemistry
Chemistry 2622	Organic Chemistry II
Chemistry 2633 (2 hrs)	Organic Chemistry Laboratory
Geography 1002	World Regions
Geology 1001A (3 hrs)	General Geology
Geology 1001 (4 hrs)	General Geology
Geology 1002A (3 hrs)	Historical Geology
Geology 1002 (4 hrs)	Historical Geology
Honors 2040	Inquiries in Math and Computer Science
Honors 2050	Inquiries in the Natural Sciences
Mathematics 1020	Contemporary Mathematics
Mathematics 1030	College Algebra
Mathematics 1035 (2 hrs)	Trigonometry
Mathematics 1100	Basic Calculus
Mathematics 1102	Finite Mathematics
Mathematics 1105	Basic Probability and Statistics
Mathematics 1150	Structure of Mathematical Systems I
Mathematics 1800 (5 hrs)	Analytic Geometry and Calculus I
Mathematics 2510	Structure of Mathematical Systems II
Physics 1001	How Things Work
Physics 1011 (4 hrs)	Basic Physics I
Physics 1012 (4 hrs)	Basic Physics II
Physics 2111 (5 hrs)	Physics: Mechanics and Heat
Physics 2112 (5 hrs)	Physics: Electricity, Magnetism and Optics

Credit Hours

All candidates for baccalaureate degrees must complete a minimum of 120 semester hours. At least 45 of these hours must be courses numbered 2000 or above (or comparable courses transferred). Students must maintain a minimum 2.0 grade point average overall, as well as in their area of specialization. Students seeking two degrees must meet all degree and residency requirements of each degree.

Other Requirements

Mathematical Skills

Proficiency in the basic mathematical skills area should be satisfied before the student completes 24 hours of course work. Proficiency can be obtained in either of the following ways.

Completing, with a grade of C- or better, a college credit mathematics course. Scoring 26 or higher on the Missouri Math Placement Test (MMPT). The MMPT covers mathematics through the college algebra level.

*The first two college credit mathematics courses that the university offers which satisfy mathematics proficiency are Math 1020: Contemporary Mathematics and Math 1030: College Algebra. Math 1020 is designed as a terminal mathematics course for students who do not plan to take calculus. Math 1030 is required for all students who want to go on to calculus. The prerequisite for enrolling in Math 1020 or Math 1030 is a satisfactory score on the math placement test (effective January, 2005). **This test must be taken not earlier than 6 months before enrolling in the course.**

Study guides for the UM-St. Louis Math Placement Test and the MMPT (as well as the UM-St. Louis Trigonometry Test, which is not needed for minimum math proficiency) are available on the University's home page, under math placement information/math practice test, as well as at the circulation desk of the Thomas Jefferson Library (file number 991). Students will need to make their own copies. Math placement test dates are published in the *Schedule of Courses*.

Advanced Expository Writing

Effective fall semester 1985, students must also complete English 3100, Advanced Expository Writing, or its equivalent, with a grade of C- or above.

American History and Government

Students must satisfactorily complete a course or courses in American history or government taken at UM-St. Louis or at other colleges or universities in Missouri. Transfer students should check with the dean's office of their division to find out if they have fulfilled this requirement.

The requirement may be satisfied by one of the following courses:

- CCJ 1100, Introduction to Criminology and Criminal Justice (Criminology majors may not use this course to satisfy the state requirement.)
- CCJ 2226, Law and the Individual
- Hist 1001, American Civilization I
- Hist 1002, American Civilization II
- Hist 1003, African-American History
- Hist 1004, The History of Women in the United States
- Hist 2007, The History of Missouri
- Hist 3002, United States History: Revolution and the New Nation, 1763 to 1815
- Hist 3041, Topics in American Constitutional History
- PolSci 1100, Introduction to American Politics
- PolSci 1800, World Politics
- PolSci 2260, Law and the Individual
- PolSci 2280, Judicial Politics, Process and Policy
- PolSci 2290, Women and the Law
- PolSci 2300, State Politics
- PolSci 2320, African-Americans and the Political System
- PolSci 2350, Introduction to Urban Politics
- PolSci 2380, Women in U. S. Politics
- PolSci 2400, Public Administration
- PolSci 2420, Introduction to Public Policy
- PolSci 3200, Constitutional Law
- PolSci 3210, Civil Liberties
- PolSci 3260, Judicial Decision Making
- PolSci 3300, The American Presidency
- PolSci 3330, Introduction to Political Behavior
- PolSci 3331, Congressional Politics
- PolSci 3350, Political Parties and Elections
- PolSci 3370, Mock Constitutional Convention
- PolSci 3400, Bureaucratic Politics
- PolSci 3450, Urban Administration
- PolSci 4470, Urban Planning and Politics

Cultural Diversity Requirement.

To expand cultural awareness, students in some academic units may be required to complete a course that emphasizes Asian, African, Middle Eastern, Latin American, Pacific aboriginal, Native American, or a comparable culture. Courses that satisfy this requirement involve substantial material independent of the cultures' interactions with European cultures. If a course focuses on one facet of a culture, it must treat the topic within the context of the culture as a whole. These courses are also coded with the initials [CD] for Cultural Diversity. This requirement may be met by one of the following courses:

Anth 1011, Introduction to Cultural Anthropology
Anth 1019, Introduction to Archaeology
Anth 1021, The Body in Culture
Anth 1025, World Cultures
Anth 1033, World Archaeology
Anth 1041, Sex and Gender Across Cultures
Anth 1051, Anthropology of Sport
Anth 1091, Introductory Topics in Anthropology
Anth 2110, Cultures of Asia
Anth 2111, Cultures of East Asia
Anth 2113, Cultures of South Asia
Anth 2114, Cultures of the Near and Middle East
Anth 2120, Native Peoples of North America
Anth 2123, Cultures of Oceania
Anth 2124, Cultures of Africa
Anth 2131, Archaeology of Missouri
Anth 2132, Archaeology of North America
Anth 2134, Archaeology of the Inca, Aztec, and Maya
Anth 2135, Old World Archeology
Anth 2136, Archaeology of East Asia
Anth 2137, Archaeology of Africa
Anth 2138, African-American Archaeology
Anth 2173, Archaeology and Cultures of the Biblical World
Anth 2191, Special Topics in Non-Western Cultures
Anth 3235, Women in Sub-Saharan Africa: A Contemporary Perspective
Anth 3238, Culture and Business in East Asia
Art History 1103, Pre-columbian Art of Mexico and Central America
Art History 1104, Indigenous Arts of North America
Art History 1105, Introduction to the Arts of Africa
Art History 1108, Introduction to Asian Art
Art History 1109, The Arts of China
Art History 1110, The Arts of Japan
Art History 4405, Topics in African Art
Art History 4408, Topics in Asian Art
English 1710, Native American Literature
English 2280, The Contemporary World in Literature
Chinese 2150, Chinese Literature in Translation
Japanese 2150, Classic Japanese Literature in Translation
History 1041, East Asian Civilization
History 1042, East Asian Civilization
History 1051, Latin American Civilization
History 1052, Mexican Civilization
History 1061, African Civilization To 1800
History 1062, African Civilization Since 1800
History 1063, The African Diaspora to 1800
History 1064, The African Diaspora since 1800
History 3032, History of Women in Comparative Cultures
History 3101, Modern Japan: 1850 to the present
History 3102, Modern China: 1800 to the Present
History 3103, Modern History of the Pacific Rim
History 3201, History of Latin America: To 1808
History 3202, History of Latin America since 1808
History 3301, West Africa to 1800

History 3302, West Africa Since 1800
History 3303, African Diaspora to 1800
History 3304, African Diaspora Since 1800
Honors 2310, Cultural Diversity in the Humanities
Honors 2330, Cultural Diversity in the Social Sciences
Music Theory & Composition 1090, Non-Western Music I
Music Theory & Composition 1100, Non-Western Music II
Phil 1120, Asian Philosophy
Phil 1125, Islamic Philosophy
PolSci 1500, Introduction to Comparative Politics
PolSci 1550, Women and Politics in the Developing World
PolSci 2520, Middle Eastern Politics
PolSci 2530, Political Systems of South America
PolSci 2540, Political Systems of Mexico, Central America, and the Caribbean
PolSci 2550, East Asian Politics
PolSci 2580, African Politics
Soc Work 2330, Asians in Migration
Soc 3245, Sociology of South Africa
Th& Dance 1850, Introduction to Non-Western Theatre

Reserve Officers Training Courses

Only Military Science 4101 and 4102 may receive degree credit in Arts and Sciences and the College of Fine Arts and Communication. All other Military Science courses receive no credit and they are not counted in the student's grade point average.

Graduate Study

The Graduate Faculty sets Graduate School policies in the Bulletin. Students should be aware that their programs might have rules and policies that are above these minimum university-wide requirements.

Admissions

The University of Missouri-St. Louis admits qualified individuals to study for graduate degrees and certificates. Students with a bachelor's degree or the equivalent from an accredited college or university may apply for admission to the Graduate School. Applicants may be denied admission if (a) they do not meet admission standards, (b) there are no available openings, or (c) applications are incomplete at the time of the decision.

To receive graduate credit at the University of Missouri-St. Louis students must have been admitted to the Graduate School as Degree-seeking, Graduate Certificate or Non-Degree seeking student.

Degree-Seeking or Graduate Certificate Students

Applicants for a degree or graduate certificate program at the University of Missouri-St. Louis submit an application, official transcript documenting the baccalaureate degree, scores from examinations required by the program, and other evidence of academic and professional preparation required by the program. Such evidence may include standardized test results, letters of recommendation, transcripts of all academic work attempted, and writing samples.

When there are openings for new students, applicants are normally admitted given official evidence of (a) a baccalaureate or advanced degree from an accredited institution of higher education, (b) an undergraduate grade point average (G.P.A.) and major field G.P.A. of at least 2.75, (c) an acceptable score on each requisite examination, and (d) satisfactory additional materials required by the particular program. The dean of the Graduate School makes the final decision on applications, based on recommendations from the unit.

Applicants who are unable to provide all materials required for admission may be admitted provisionally. An approved provisional student may enroll for one semester or summer term only. When all admission materials have been received, the unit may recommend regular or restricted admission or denial to the dean of the Graduate School. If the applicant is admitted, courses taken provisionally will apply in the regular way to a degree or certificate program.

Because admission to doctoral studies is limited to those of demonstrably superior academic ability, doctoral students normally are not admitted as restricted.

Non-Degree-Seeking Student

Applicants may seek status as Non-Degree-seeking graduate students if they are visiting students, they do not intend to pursue a degree, or they want to participate in graduate workshops or institutes. Applicants must provide an official transcript showing completion of a baccalaureate or higher degree, with a G.P.A. of at least 2.5.

The dean of the Graduate School admits Non-Degree-seeking students only upon recommendation of the unit.

A Non-Degree student must maintain a G.P.A. of at least 3.00.

Course work completed by Non-Degree students is not regarded as work toward a degree program. Therefore, Non-Degree students are not eligible for federal financial aid. The maximum hours of Non-Degree status work that can be applied to a degree program is nine semester hours. A Non-Degree student wishing to take more than nine hours may be allowed to do so contingent upon departmental recommendation. No credits taken as Non-Degree status may count as part of the residence requirement for a degree.

Since Education Certification students take courses for state Department of Education certification, they do not need departmental approval to take more than nine hours. However, all other conditions regarding admission and registration that apply to Non-Degree students apply to Education Certification students.

Students wishing to change from Non-Degree to Degree seeking must submit a new graduate application for review and approval by the unit and the dean of the Graduate School.

Traveling Scholars and Inter-University Graduate Exchange Students

There are two avenues for students to take graduate courses at UM-St. Louis without applying for admission (1) Traveling Scholars are graduate students at one of the other University of Missouri (UM) campuses. (2) Inter-University Graduate Exchange students are Washington University and St. Louis University students who enroll on the home campus for UM-St. Louis courses not offered on their own campus.

Degree-seeking graduate students at UM-St. Louis may also participate in these programs, if their advisors and the Graduate School approve their requests.

Unclassified Students

Students who are not qualified for admission to the Graduate School may be considered for undergraduate

admission to UM-St. Louis as Unclassified Students. Unclassified Students are considered Post-baccalaureate, are not admitted to the Graduate School, may not take graduate-level courses, and do not receive graduate credit. Credits earned by an Unclassified Student may not later be considered as graduate credits should the student subsequently be admitted to the Graduate School.

Enrollment in Off-Campus and Continuing Education Courses

Students who have been admitted to the Graduate School may enroll in off-campus graduate courses without further application.

Students with a baccalaureate degree who have not been admitted to the Graduate School must be approved for admission as a Non-Degree graduate student to take Continuing Education courses for graduate credit.

Admission of International Students

International students must meet all requirements for admission to the Graduate School. In addition, international students whose native language is not English and who have spent less than two of the last three years in an English-speaking country are required to submit scores from an internationally accepted standardized examination before a decision is made on admission.

Teaching assistantships will be awarded only to students with demonstrated oral English proficiency.

When it is not possible for a student to take the required examination for reasons beyond personal convenience, the unit to which the student has applied may develop alternate ways for that particular student to demonstrate English language competence prior to admission. The Graduate Dean must approve such alternative metrics.

Applicants from other countries shall provide a summary of their educational experience as a basis of comparison of their backgrounds with those of U.S. applicants. They must also provide a statement of their financial situation and the anticipated form of support for the period of graduate study.

Enrollment

Students who have been admitted to the Graduate School may enroll in classes in any term within one calendar year after admission.

To remain in good standing, students shall enroll for at least one term each calendar year. Students not meeting this enrollment requirement will become inactive and be required to reapply. If students reapply and are readmitted, they will be subject to all regulations in effect at the time of readmission.

After they achieve candidacy, Doctoral students must enroll each fall and spring semester until the degree is completed.

International students on student visas must enroll fulltime for each fall and spring semester.

Fulltime Study

The minimal fulltime course load is nine credit hours for a regular semester and/or five credit hours during the eight-week summer session.

Graduate Equivalent Hours

In calculating credit hours for full-time enrollment, students may seek approval for the following semester hour equivalents:

- 1.) Three equivalency hours for holding a 0.5 FTE Graduate Teaching Assistantship or Graduate Research Assistantship; up to two equivalency hours for appointments between 0.25 and 0.49 FTE.
- 2.) Three equivalency hours in the semester the student is preparing for comprehensive examinations. This semester hour equivalency is allowed for a maximum of two semesters.
- 3.) Eight equivalency hours after achieving candidacy. This semester- hour equivalency is allowed for a maximum of eight semesters.
- 4.) Participation in approved required out-of-class experiences in specific programs. Please see your advisor for the approved list.

Overloads

During the regular semester, students may not enroll in more than 12 hours. Normally no more than three credit hours may be taken in any four-week period.

Heavier than normal loads may be permitted by the Graduate Dean, upon recommendation by the unit, for a) students whose cumulative UM-St. Louis G.P.A. is substantially above the program average; and b) students in good academic standing for whom an overload of one course will permit them to graduate during the term in which the overload is taken.

Degree Program Plans

It is expected that graduate students will consult regularly with their advisors to plan a course of study that ensures timely completion of the requirements.

At least half of the credits for master's, educational specialist and doctoral degree plans must be from 5000-level courses and above.

Within the major department, students normally may not take a 3000-level course for graduate credit. However, outside the department, a 3000-level course may be taken for graduate credit with the approval of the students' advisors. Advisors must seek approval from the instructor, who may assign additional work commensurate with the student's graduate status.

Courses numbered from 0 to 2999 may not be taken for graduate credit.

No course applied to an undergraduate degree may be allowed in that student's graduate degree.

Credit for Courses Taken Prior to Enrolling in a Graduate Program at UM-St. Louis

Transfer credit shall be granted only for approved graduate courses for which a grade of at least B-, or equivalent, was achieved from an accredited institution.

Degree credit may be allowed for up to three credit hours for institutes, workshops, clinics, and Continuing Education courses only if offered by an appropriately accredited institution of higher education. Only such courses that award a letter grade may be applied to a graduate degree.

Students may transfer up to 18 hours of work on a Graduate Certificate Program Plan to a Master's or Doctoral Program Plan, if the unit granting the degree approves the transfer.

Credit for Courses Taken at Other Universities After Enrolling in a Graduate Program at UM-St. Louis

Graduate students admitted to UM-St. Louis must petition in advance to take courses at another institution and apply the credit toward a graduate degree at UM-St. Louis.

With prior approval, regularly admitted graduate students are permitted to take a course not offered by UM-St. Louis at Washington University, St. Louis University, or Southern Illinois University-Edwardsville.

Time Limitation

The maximum time allowed for completion of a master's degree is six years after the first course enrollment. The maximum time allowed for completion of an educational specialist degree is six years after the first course enrollment. Graduate work completed outside these time periods may not be included in the degree program except under extraordinary circumstances and then only after petition to and approval by the dean of the Graduate School. An exception to the time limitation may be approved in advance with an authorized leave of absence.

Leave of Absence

Graduate students who are forced to interrupt their studies for a period of one or more years should request a leave of absence from the university. In consultation with their advisors, students shall define the program modifications that the leave of absence requires. Requests must indicate the reason for leaving and the expected date of return to the university. Approval of the dean of the Graduate School is required.

The leave of absence is designed to suspend the requirement for continuous enrollment. It does not affect

the maximum time limitation set for a degree program unless a specific exception is approved.

Undergraduate Enrollment in 5000-Level Courses

Under special circumstances undergraduate students in good standing at UM-St. Louis may enroll in 5000-level courses for undergraduate credit. Approvals from the advisor, department chairperson, academic dean, and dean of the Graduate School are required. In rare cases, students subsequently admitted to the Graduate School may petition for graduate credit for 5000-level courses that they took as undergraduates, as long as those courses were not applied to their undergraduate degrees.

Class Attendance

Only students who have previously paid fees may attend a class. Instructors are not authorized to allow students to attend classes if fees have not been paid. Students may not register and pay fees after the prescribed dates.

Preregistration

Enrolled students may preregister for the next term during regular preregistration periods. Registration is not complete until all university fees are paid.

Petitioning Into or Out of a Course

Students must receive the approval of their adviser and the course instructor to enroll in or withdraw from a course after registration.

Entering a Course in Progress

Students wishing to enter a course in progress must have the approval of the instructor and their adviser. Only under exceptional circumstances may students enter courses after the first week of the semester.

Dropping a Course

Students may drop courses before the end of the fourth week of a regular semester or the second week of the summer session without receiving grades. At the end of this period and until the end of 12 weeks (or from the third through the sixth week of the summer session), students may withdraw from courses with "Excused" grades providing they are passing the course and have the approval of the instructor and their adviser. Otherwise, a grade of F is given. Students who stop attending classes without officially dropping courses also receive grades of F.

Transcripts

The registrar will furnish transcripts of credits to a student upon written request. Transcripts are furnished to students' parents or guardians or other parties or institutions only if students have filed written consent with the registrar. There is a charge per transcript. Students transferring to another University of Missouri campus may ask the UM-St. Louis Director of Admissions to furnish a transcript to the Office of Graduate Admissions at the other UM campus.

Requests for transcripts by organizations either financially supporting a student or with fee compensation programs are not honored unless the student has filed a consent form with the registrar, authorizing the release of such records.

Transcripts are not issued to or for students who have financial obligations to the university until those obligations are paid in full.

Academic Policy Grades

Faculty teaching graduate courses have complete discretion in assigning grades.

Point assignments for grades are as follows;

A = 4.0

A- = 3.7

B+ = 3.3

B = 3.0

B- = 2.7

C+ = 2.3

C = 2.0

C- = 1.7

F = 0

EX = Excused

DL = Delayed

IP = In Progress

The satisfactory/unsatisfactory (S/U) option, which is an option for undergraduate students, is not normally available in courses for graduate credit. S/U grades may be given only for specific internships, practica, or project courses as requested by a school or college, with prior approval from the Graduate Council. Courses on the S/U grading system will carry no points toward calculation of the grade point average.

Students who stop attending classes without officially dropping courses receive grades of F.

Students may enter courses as auditors but may not change from audit to credit or credit to audit after the first week of class. Auditors are charged full fees and receive no academic credit.

Delayed Grades

Delayed grades may be given when a student's work is of passing quality but is incomplete because of circumstances beyond the student's control. Although delayed grades do not affect a graduate student's grade point average, they are an important factor in evaluating academic progress. Delayed grades must be removed within two regular semesters after the time recorded or they automatically become F grades. In such cases, course instructors may subsequently change F grades to other grades on their progress in a sequential course and indicate that a grade will be assigned at the end of the sequence.

In-Progress Grades

When a course extends for more than one term and the student's performance is deferred until the end of the final term, provisional grades of In-Progress may be assigned in the intervening terms. The In-Progress grade represents progress in a sequential course and indicates that a grade will be assigned at the end of the sequence. In-Progress grades do not count toward earned hours. No credit is awarded or grade points assigned until the sequence is completed and a permanent grade is entered replacing the In-Progress grade(s).

In-Progress grades may be given in thesis or dissertation research. Additionally, the Graduate Council may approve the In-Progress grade for specific internships, practica, or project courses that allow at least six months for completion. In no case will an In-Progress grade be given for other graduate research or internship experiences. Instead, students will be given a Delayed grade if work is not completed during the semester that the course is taken.

In-Progress grades are left on the student's record until the committee and dean of the Graduate School accepts the thesis or dissertation and the research advisor or internship director submits the final regular grade. At that time, the grade point average will be calculated to award the same grade for all hours taken in the In-Progress grade.

In the event that the full sequence is not completed as scheduled, the Registrar shall replace the In-Progress grade with the Delayed grade when the instructor has no basis for assigning a grade for the term(s) completed.

Graduate Grade Appeals

In case of disputes regarding grades, graduate students shall follow the university Grade Appeal Process by contacting the Department Chair.

Grade Point Average (GPA)

UM-St. Louis calculates three types of G.P.A. At the end of each semester, the term G.P.A. is calculated on the courses attempted that semester. The cumulative GPA on the transcript includes all courses taken at UM-St. Louis for graduate credit figure, including courses that may not be a part of the degree program. The degree program GPA includes only the grades of those courses that are part of the degree program. The degree program GPA must be at least 3.0 for a student to receive a graduate degree.

Grade modification is not an option for graduate students.

Any course work transferred from other universities, including other UM campuses, will not be included in any GPA calculation.

Probation

Failure to make adequate progress jeopardizes a student's potential to complete the degree as well as their financial aid. To provide students notice of inadequate progress at

the end of each semester, graduate students with a cumulative GPA below 3.0 in a minimum of nine credit hours are placed on probation. A program may also place a student on probation if faculty regards the student's progress as unsatisfactory. The Graduate School will inform students of their probation by letter, with copies sent to the graduate director of the program, the Graduate Admissions Office and Financial Aid.

If at the end of the probationary semester the cumulative GPA is at least 3.0, the probationary status is removed. A probationary student who fails to raise the cumulative GPA to 3.0 may, on the recommendation of the program, be allowed a second probationary semester.

Dismissal

A student who is on probation for more than two semesters during his/her program of study will be dismissed, unless the dean of the Graduate School approves an exception request for continuation from the advisor and/or graduate director. Upon recommendation of the unit, the Graduate School may dismiss any graduate student who does not make adequate progress. The Graduate School is responsible for sending dismissal letters to students, with copies sent to the graduate advisor, the graduate director of the program, the Graduate Admissions office, and the Financial Aid Office.

Master's Degree Requirements

Admission

Each master's degree program determines any eligibility standards beyond the minimum for admission to the Graduate School.

Enrollment

All master's degree students shall be enrolled for credit for access to university resources, including advisement, data gathering, or examinations.

Full-time status for all graduate students is defined as at least nine credit hours of course work. Individual units may require higher enrollments.

Credit Requirements

A minimum of 30 semester hours of graduate credit is required for all master's degree programs. Units may require a greater number of hours for their programs.

Residence Requirement

The final two-thirds of the courses in a master's degree program must be completed at UM-St. Louis.

Time Limitation

All courses included in a master's degree program, whether taken at UM-St. Louis or at another institution, shall have been completed within six years after enrollment in the first course.

Credit From a Certificate Program

Students who have completed course credits in certificate programs may transfer those credits into a master's degree program with the unit's consent, as long as the credits fall within the time limitation set for master's degrees. If the master's degree is in a different unit from that awarding the certificate, then no more than one-third of the credits from the certificate program may apply to the master's degree. Multi-disciplinary programs may seek programmatic exceptions to this limit when the program undergoes the approval process.

Dual Master's Degrees

With approval of the unit and the Graduate School, students who have completed one master's degree may transfer appropriate credits to a second master's degree program. The number of transferable credits may not exceed one-third of the credit hours required by the second program. Subsequent transfers of the same courses to a third degree are not permitted.

With approval of the units involved and the Graduate School, students may simultaneously pursue two master's degrees under the following conditions: (a) No more than one-third of the credit hours required by either program may be applied to both programs; (b) Students must obtain approval of both units before completing 12 hours in either program.

Multi-disciplinary programs may seek programmatic exceptions to the one-third limit when the program undergoes the approval process by addressing specific allowable transfers between those two degree programs.

Master's Degree for Doctoral Students

Doctoral students may receive a master's degree in their unit for work they have completed toward to a doctoral degree. The unit establishes the requirements for such a master's degree. However, the requirements should, in principle, be similar to those for master's degrees offered by the unit.

Doctoral students may also receive a master's degree for work they have completed toward to a doctoral degree in another unit provided (a) they apply no more than two-thirds of the master's degree courses to their doctoral degree program; (b) they have been admitted to the master's degree program; and (c) they have obtained the approval of the advisors from both programs and from the Graduate School. Credit from the master's degree must constitute less than half the total credits required for the doctorate.

Multi-disciplinary programs may seek programmatic exceptions to these limits when the program undergoes the approval process.

Filing the Degree Program

A master's degree student shall file an approved program plan with the Graduate School before completing the first two-thirds of the credit hours required in the program. Students may petition the dean of the Graduate School to change the degree program after it has been filed.

Comprehensive Examination, Scholarly Paper, or Exit Project

Each unit requiring a comprehensive examination for the master's degree informs the Graduate School of (a) the number of times the unit will allow its students to take a comprehensive examination, and (b) the period of time that the unit will allow between the first and final attempt to pass the examination.

Units recommend Graduate Faculty members to serve on committees for capstone projects. The Graduate Dean shall review and may appoint the committee.

Master's Thesis

Units recommend Graduate Faculty members to serve on committees for capstone projects. The Graduate Dean shall review and may appoint the committee.

Master's degree students who write a thesis must submit to the dean of the Graduate School one copy of the thesis by the posted university deadline, normally six weeks before the end of the term in which graduation is sought. The chairperson of the thesis committee is responsible for verifying that the final draft of the thesis is acceptable to the Graduate Dean and the thesis committee.

Students disseminate the thesis according to current Graduate School procedures.

Application for Master's Degree

To receive the master's degree, students who have met all degree requirements must apply for graduation by the end of the fourth week of classes during the fall or spring term or by the first day of the eight-week session during the summer term.

Educational Specialist Degree Requirements

Admission

Each educational specialist degree program shall determine any eligibility standards beyond the minimum for admission to Graduate School.

Enrollment

All educational specialist degree students shall be enrolled for credit for access to university resources, including advisement, data gathering, or examinations.

Full-time status for all graduate students is defined as at least nine credit hours of course work. Individual units may require higher enrollments.

Credit Requirements

A minimum of 60 semester hours of graduate credit is required for all educational specialist degree programs. Individual programs may require a greater number of hours.

Residence Requirement

Normally, at least one half of the courses in an educational specialist degree program must be completed in residence at UM-St. Louis.

Time Limitation

All courses included in an educational specialist degree program, whether taken at UM-St. Louis or at another institution, shall have been completed within six years after enrollment in the first course.

When educational specialist students have earned a master's degree at any institution, appropriate credits may be applied toward meeting the requirement for the specialist degree, subject to unit approval. Such credits shall constitute less than half of the total credits required for the educational specialist degree. Credit for courses taken for a master's degree is exempt from the six-year time limitation.

Filing the Degree Program

An educational specialist degree student enrolled shall file an approved program plan with the Graduate School before completing two-thirds of the credit hours required in the program. Students may petition the dean of the Graduate School to change the degree program after it has been filed.

Comprehensive Examination, Scholarly Paper, or Exit Project

Each program requiring a comprehensive examination for the specialist degree informs the Graduate School of (a) the number of times the unit will allow its students to take a comprehensive examination, and (b) the period of time that the unit will allow between the first and final attempt to pass the examination.

Programs recommend Graduate Faculty members to serve on committees for capstone projects. The Graduate Dean shall review and may appoint the committee.

Thesis

Units recommend Graduate Faculty members to serve on committees for capstone projects. The Graduate Dean shall review and may appoint the committee.

Educational Specialist degree students who write a thesis must submit to the dean of the Graduate School one copy of the thesis by the posted university deadline, normally six weeks before the end of the term in which graduation is sought. The chairperson of the thesis committee is

responsible for verifying that the final draft of the thesis is acceptable to the Graduate Dean and the thesis committee. Students shall disseminate the thesis according to current Graduate School procedures.

Doctoral Degree Requirements

Admission

Each doctoral degree program may determine eligibility standards beyond the minimum for admission to the Graduate School.

Credit Requirements

A minimum of 60 semester hours of graduate credit is required in every doctoral degree program. Units may require a greater number of hours for their programs, and individual students may be required to take additional hours.

Enrollment

Full-time status is defined as nine credit hours per semester. Units may require higher enrollments than this. After students achieve candidacy and complete the residence requirement, they must remain enrolled during fall and spring semesters until they complete the degree. Failure to register in any regular semester will result in termination from the Graduate School. If students so terminated decide to reapply and if they are readmitted, they will be subject to all regulations in effect at the time of readmission, and will be required to enroll for at least one credit hour for each semester since their last enrollment.

When doctoral students are enrolled for research credit, the credit amount may vary, but the student must register for all work required, and the credit total may exceed the minimum requirements.

Classification of Doctoral Students

There are two stages in a student's doctoral degree work:

- (1) A pre-candidate is a student who has requirements to fulfill in addition to the dissertation, including course work, language requirements, and/or comprehensive examinations.
- (2) A candidate is a student who has met all degree requirements except the proposal and the dissertation.

Time Limitation

The maximum amount of time allowed for completion of a Doctoral degree is eight years after the first course enrollment.

The maximum of 12 hours of graduate credit completed as a post-master's degree student prior to admission to a doctoral program may apply toward a doctoral degree. Inclusion of such course work is subject to unit approval and must have been completed within eight years of the

time the doctoral degree is awarded. Exceptions to this regulation must be justified on academically defensible grounds and approved by the Graduate Dean prior to filing the program plan.

When doctoral students have earned a master's degree at any institution, appropriate credits may be applied toward meeting the requirement for the doctoral degree, subject to unit approval. Such credits shall constitute less than half of the total credits required for the doctorate. For example, for a doctoral degree requiring 90 hours of work beyond the bachelor's degree, no more than 44 credits from a master's degree may apply to the doctoral degree. Credit for courses taken for a master's degree is exempt from the doctoral program's eight-year time limitation.

Residence Requirement

The majority of credits used to satisfy requirements for a doctoral degree must be completed at UM-St. Louis. The residence requirement may be satisfied with dissertation credit hours, graduate institutes, and credit courses taken through Continuing Education, as well as regular courses.

Students who enter the Ed.D. or Ph.D. in Education degree programs with an Education Specialist (Ed.S.) degree from an accredited university, or with an Advanced Certificate approved by the Missouri Department of Elementary and Secondary Education, may satisfy the residence requirement by completing one-third of the required credits at UM-St. Louis.

Residency normally requires that doctoral students successfully complete a minimum of 15 hours over two consecutive terms, which may include summer. The dean of the Graduate School may grant exceptions upon recommendation by the program.

Comprehensive Examinations

Each unit will determine the number of times a comprehensive examination may be taken by a student. The department or college must file with the Graduate School a statement specifying (a) the number of times the unit will allow its students to take a comprehensive examination, and (b) the maximum and/or minimum period of time the unit will allow between the first and final attempt to pass the comprehensive examination.

The Comprehensive Examination Committee consists of no fewer than three members of the UM-St. Louis graduate faculty appointed by the Graduate Dean upon recommendation of the unit.

An oral examination may not substitute for the standard written portion.

Advisors

Upon entering the program, each doctoral student will have an assigned program advisor who is a member of the Graduate Faculty. As early as possible in a doctoral

student's program, but no later than when the student achieves candidacy, the unit will recommend, in consultation with the student, a doctoral dissertation advisor.

Application for Candidacy

Doctoral students may apply for candidacy after passing all required comprehensive and language examinations, written or oral, and successfully completing all course work.

Doctoral Dissertation Committee

The Doctoral Dissertation Committee consists of at least four members of the Graduate Faculty who can contribute their expertise to the dissertation study: the committee chair, and at least one other member from the unit. A recognized scholar from outside the university may serve as a member upon the recommendation of the unit and approval of the Graduate Dean. The Graduate Dean reviews and may approve the committee membership and changes in the committee membership.

Dissertation Proposal

Before a student may conduct substantial research for the dissertation the committee must approve a proposal after a formal defense. The student submits the approved proposal for review and approval by the dean of the Graduate School. An approved dissertation proposal in no way implies a contract between the university and the student. Depending on the outcome of the research, the dissertation may require substantially more work than anticipated when the proposal was approved. The termination of a line of research and the adoption of a substantially new dissertation project requires the preparation, formal defense, and acceptance by the Graduate School of a new dissertation proposal.

Preliminary Approval

One copy of the dissertation, certified as complete and provisionally acceptable to the committee, shall be submitted to the Graduate Dean at least six weeks prior to commencement. The Dean of the Graduate School may seek advice and make suggestions to the committee about content and style before approving the dissertation.

Defense of Dissertation

Normally the approved Doctoral Dissertation Committee serves as the Oral Defense of Dissertation Committee. The Graduate Dean may appoint one additional qualified voting member to the Defense of Dissertation Committee from the Graduate Faculty within the University of Missouri System.

After deliberating on the oral defense of the dissertation, the Defense of Dissertation Committee votes on whether the defense was successful. The defense shall be deemed unsuccessful if there are two negative votes, even if outnumbered by positive votes. An abstention will be considered a negative vote. A student failing an oral

defense shall have the opportunity for one additional defense before the same committee. The Defense of Dissertation Committee shall determine the timing and format of the subsequent defense.

Final examinations are open to the public.

The decision of the Defense of Dissertation Committee is final. The report of the final examination is due to the Graduate School no later than two days after the examination.

Dissertation Abstracts

Two different abstracts are required. The publishing company requires an abstract of a maximum of 350 words that is published with the announcement of the dissertation defense. The abstract forming the second page of the dissertation should be no more than 600 words.

Dissertation Format

Only high quality copies are acceptable with the following margins throughout: left margin 1 ½ inches; top, bottom, and right margins, 1 inch. Final copies may be submitted electronically following current procedures on the Graduate School homepage (<http://www.umsi.edu/divisions/graduate/etd/index/html>) or on paper. Original hard copies of the dissertation must be typed on good quality paper, and they must be legible and neat in order to be accepted by the Graduate School.

In matter of style and documentation, the custom of the discipline shall be followed.

The chairperson of the dissertation committee is responsible for verifying that all the changes suggested by the Graduate Dean and the dissertation committee have been incorporated in the final draft of the dissertation or have been discussed further with the Graduate Dean or the committee.

Students disseminate the dissertation according to current Graduate School procedures.

Graduate Certificate Program

Admission

Each graduate certificate program may determine eligibility standards beyond the minimum for admission to the Graduate School.

Credit Requirements

A minimum of 18 hours of graduate course work is required for a graduate certificate. At least 12 of these hours must consist of courses drawn from the list of core courses for the particular certificate program. At least 12 hours must be completed as a graduate student at UM-St. Louis. At least nine hours must be at the 5000 level or above. No more than six hours may be independent study.

Filing the Program Plan

A graduate student enrolled in a certificate program is required to file a certificate program plan with the Graduate School before completing the first two-thirds of the number of hours required in the program. Changes made in a certificate program plan after it has been filed must be submitted to the Graduate School.

Fees for Graduate Study

Detail information regarding current fees and residency regulations is furnished in the *Schedule of Courses*, distributed before each semester registration, available at the Registrar's office or on the web site:

<http://www.umsl.edu/services/financial/feeinfo.htm>

The University reserves the right to change fees and other charges at any time without advance notice. By Board policy, students are charged fees according to their status, not by the level of the course. For that reason, students are charged graduate fees for all course work taken while they are classified as a graduate student.

Nonresident Students

A student who is admitted to the University as a nonresident must pay the Nonresident Educational Fee as well as all other required fees. The Residence and Education Fee Rules are available at:

<http://www.umsl.edu/services/finance/resrules.htm>

The petition for a change of Missouri Resident Status is available at:

<http://www.umsl.edu/services/finance/res-pet.htm>

All questions should be directed to the Office of Admissions at (314) 516-5451.

Final Semester Fee

Students must enroll on campus in the semester in which they graduate.

Thesis and Dissertation Fee

Graduate students must pay a fee for the binding and microfilming of the thesis or dissertation.

Fees for Auditing Courses

Auditors are charged full fees and receive no academic credit.

Laboratory Breakage Fee

Breakage or loss of laboratory equipment due to personal negligence on the part of the student shall be assessed against the student when the actual value of the supplies exceeds \$1. The amount of the charge is determined by the department chairperson.

Room and Board

The university offers many different rooms and board plans. For more information please contact the Office of Residential Life at (314)516-6877.

Student Insurance: International Students (required)

International Students in F-1 and J-1 status are required to purchase the health insurance policy offered through the university. Information regarding waivers, premiums and coverage is available through the Office of International Students Services.

Student Insurance (optional):

An Accident and Sickness Insurance plan is available to students and their dependents. Information concerning premiums and coverage is available upon request from University Health Services. Graduate Assistants with half-time appointments are eligible for a subsidy of the insurance premium. To receive the subsidy, GTAs/GRAs (U.S. Citizens only) must enroll in the insurance program through the Graduate School.

Payment of Fees

Students received a fee payment schedule at the time of their registration. All fees are due and payable according to that schedule. A minimum payment plan is available for students unable to complete their financial arrangements at the time of registration. A finance charge will be assessed on the unpaid balance at the rate of 1 percent per month. All accounts will be billed using this method; therefore, it is not necessary that a student choose the minimum payment plan at the time the charges are incurred. Students with delinquent accounts will NOT be allowed to register in subsequent semesters and may not receive a transcript.

Policy on Administrative Cancellation of Student Registration for Nonpayment of Educational Fee:

A registered student is required to remit payment of assessed fees by deadlines that are announced each semester. The University will cancel the registrations in all courses of students from whom the University has not received and processed either the full payment or the required minimum payment (a stipulated portion of the balance due after deducting approved financial aid) for assessed fees by announced deadlines.

Policies and Procedures Related to Cancellation of Student Registration

- The University will make efforts to notify any student whose registration is about to be administratively cancelled prior to taking this action.
- On or before the last day on which a student may enroll in a course, a cancelled student's space in a course will be given to other students on that course's wait lists. The cancelled student will be placed at the end of the course wait list.
- Any student who has been administratively cancelled for nonpayment of assessed fees may not enroll in a class unless the required fees have been paid.
- Cancelled students who re-register on or after the first day of the semester will be assessed a nonrefundable late registration charge.

- Once a student's registration has been administratively cancelled for nonpayment of assessed fees, that student may not attend class unless s/he has officially re-registered.

The University Reserves the right to modify the fees charged for attendance and other services at the University, including but not limited to educational fees, at any time when in the discretion of the governing board the same is in the best interest of the University, provided that no increases can or will be effective unless approved by the governing board not less than thirty (30) days prior to the beginning of the academic term (semester, etc.) to which the fees are applicable and such increase does not exceed ten (10) percent over the fee level existing immediately prior to the increase, with all modification of fees to be effective irrespective as to whether fees have or have not been paid by or on behalf of a student prior to the effective date of the modification.

Personal Checks.

Personal checks in payment of fees and other obligations to the university will be accepted only when the amount of the check does not exceed the amount due from the student. Any checks payable to the university which are returned unpaid will be assessed a \$20 return check charge.

Credit Cards.

Valid MasterCard, VISA, and Discover credit and debit cards are accepted toward payment of fees.

Quick and Easy Ways To Pay Fees:

- Mail, using the mail-in coupon and envelope provided with the monthly statement.
- Using STAR, from a PC in your home, work or campus. Payment can be made by credit card only.
- In Person at one of the service windows at the cashier's Office.

Fee Assessment for Dropping Classes or Withdrawal

Fees are reassessed for students who officially withdraw from the University or who drop classes. It is the student's responsibility to formally notify the registrar's office and to follow proper procedures when withdrawing from the university or dropping a class or classes. Failure to receive financial aid or refusing financial aid does not constitute an official withdrawal from the university. Likewise, failing to attend class does not, in and of itself, mean a student has dropped a class. Refer to the appropriate sections in this publication for specific information about these procedures. Fees included in the reassessment are the Educational Fee, Student Activity Fee, Instructional Computing Fee, Special Course Fee (if applicable) and Parking Fee (if applicable). Such fees are reassessed and

reduced according to the schedule published in the *Schedule of Courses* each semester.

Financial Assistance

Teaching and Research Assistantships

Most departments with established graduate programs offer teaching and research assistantships to qualified graduate students. Appointments are usually half-time and carry stipends. Students receiving .5 FTE assistantships also receive a tuition scholarship covering residential and nonresidential educational fees. Students with these assistantships must register for a minimum of six credit hours in semesters in which they hold the assistantship. Please consult the Graduate School website (<http://www.umsl.edu/divisions/graduate/index.html/>) for other policies concerning graduate assistantships. Teaching or research assistantship appointments are made directly by the departments. Inquires and applications for assistantships should be addressed to the director of the graduate program of the appropriate department.

Millennium Student Center

Fall 2000 students were the first to use this 165,000-square foot center. The design includes a four-story rotunda, a third-floor gallery with clerestory windows, and a climate-controlled pedestrian bridge leading to the academic quadrangle. In addition, there is a fireside social lounge, a quiet study lounge, a student art gallery, a large tiered meeting chamber, an expanse of first-class conference areas, twin television lounges, a game room and a cyber lab.

Students asked for a “one-stop shopping” building with a consolidation of all student services and functions under one roof. Accommodating this request, the following departments, previously scattered around the campus are conveniently located in the Millennium Student Center: Center for Student Success, Student Activities, Student Government, Student Organizations, Admissions, Registration, Financial Aid, Cashiers, Degree Audit, Career Services, Counseling Services, Women’s Center, Multi-Cultural Relations, Health Services, Accessibilities Services, Food Services, Bookstore, Convenience Store and a full service bank.

Food Services

The Millennium Student Center has a food venue on each level. The first floor features The NOSH food court where students enjoy a variety of foods in a relaxed, friendly dining experience. The second floor is the location for Aroma’s bakery and coffee shop and the convenience store for those students who want to grab and go. Catering is located on the third floor.

Bookstore and Computer Shop

The University-owned and-operated Bookstore is the headquarters for textbooks, reference materials, general reading books, supplies, gifts, and logo items.

UM-St. Louis Libraries

Amy Arnott, Dean of Libraries
M.A.L.S., University of Missouri-Columbia
Gregory Ames, Curator, John W. Barriger National
Railroad Library
M.L.S., State University of New York, Genesco
Clinton Berry, Reference Librarian
M.L.I.S., University of Missouri-Columbia;
M.A., University of Missouri-St. Louis.
Cheryle Cann, Head, Ward E. Barnes Library
M.S.L.S., University of Missouri-Columbia
Lisandra Carmichael, Head of Access Services,
M.A.I.S.L.T., University of Missouri-Columbia
Christopher Dames, Reference Librarian
M.S., University of Missouri-St. Louis;
M.L.S., Kent State University
Christopher Daniel, Acquisitions Librarian,
M.A., University of Missouri-Columbia
Mary Doran, Reference Librarian
M.L.S., University of California-Los Angeles
Julie Dunn-Morton, Curator, Fine Arts Collection,
M.A., University of Delaware;
Ph.D., University of Delaware
Joyce Edinger, Coordinator, Library Serials/Acquisitions
M.B.A., University of Missouri-St. Louis
Judith Friedrich, Technical Services Librarian
M.A.L.S., University of Missouri-Columbia
Bette Gorden, Curator, Herman T. Pott Inland Waterways
Library
M.A., University of Oregon; M.A.L.S.,
University of Missouri-Columbia
John H. Hoover, Director, St. Louis Mercantile Library,
Associate Director of Libraries for Special Collections
M.A.L.S., University of Missouri-Columbia;
M.A., Southern Illinois University-Edwardsville
Joan Miller, Reference Librarian
M.S.I.S., University of North Texas
Raleigh Muns, Reference Librarian
M.L.S., University of California-Los Angeles
Christopher Niemeyer, Reference Librarian
M.L.I.S., University of Texas at Austin
David Owens, Head, Technical Services
M.A.L.S., University of Missouri-Columbia
Janis Peach, Head of Collection Development,
M.S., University of Illinois-Urbana-Champaign
Frances Piesbergen, Reference Librarian/Government
Documents
M.A., University of Missouri-Columbia
Betsy Richie, Reference Librarian
M.S., University of Illinois-Urbana-Champaign
Karen Robinson, Reference Librarian
SISLT, M.L.S., Emporia State University;
M.A. Regent University
Marilyn Rodgers, Reference Librarian
M.A., University of Missouri-Columbia

Helen Shaw, Reference Librarian
M.Ed., University of Illinois-Champaign;
M.A., University of Missouri-Columbia

The University Libraries support the educational objectives of the university and meet the teaching, research, and informational needs of the campus community. Housed in three locations—the Thomas Jefferson Library and the St. Louis Mercantile Library at UM-St. Louis (north campus) and the Ward E. Barnes Library (south campus)—the Libraries' collections consist of more than one million volumes, 2,900 periodical subscriptions, 1.3 million U.S. government documents, over one million items in microform, and numerous special and manuscript collections.

Materials from the libraries of the four campuses of the University of Missouri, as well as the other institutions belonging to the MOBIUS consortium, can be identified in the MERLIN/MOBIUS online catalogs. Through the MERLIN/MOBIUS catalogs, users can request items from other institutions to be transferred to UM-St. Louis for check-out. A full range of services, including interlibrary loan, reference assistance, library instruction and access to a large number of databases are also available through the Libraries.

Western Historical Manuscript Collection and University Archives

William M. (Zelli) Fischetti, Associate Director
Western Historical Manuscript Collection and University
Archives
M.A., University of Missouri-St. Louis
Kenneth F. Thomas, Senior Manuscript Specialist,
Western Historical Manuscript Collection
M.A., University of Missouri-St. Louis
Linda J. Belford, Senior Manuscript Specialist,
University Archives
M.A., University of Missouri-St. Louis

The Western Historical Manuscript Collection contains primary source materials for research in many fields including local history, the environment, labor history, women's history, politics, and black history. The collection is open to the university community and the general public. Material from the other three campus WHMC collections may be borrowed for research use at UM-St. Louis. A catalog of the holdings of the other branches of WHMC is available.

The archives contain official records, campus publications, student newspapers, photographs, and other material on the history of the University of Missouri-St. Louis. Located on Level II in the Thomas Jefferson Library, the office is open for reference service Monday through Friday, 8 a.m. to 4:45 p.m. and until 9 p.m. on Tuesday. Archival and manuscript material does not circulate.

University Services

Veteran's Affairs

The Veteran's Affairs Office, 351 Millennium Student Center, serves as liaison to the Veteran Affairs Regional Office. A certifying official is available to answer veterans' questions about educational benefits and process official paperwork.

Veterans are certified to the Veteran Affairs Regional Office beginning with the date of initial registration, and regularly until the expected completion date of the VA-approved program or degree. Veteran students must promptly inform the certifying official in 351 Millennium Student Center of any changes in status that might affect benefits. Failure to report such changes can result in overpayments and other complications in receipt of benefits.

Veteran students are expected to attend classes, perform academic duties as assigned by instructors, and adhere to academic policies. Failure to do so will result in reports to the VA of unsatisfactory progress, which may result in discontinuance of benefits. Veteran students who cease attending but do not officially withdraw from class or from the university will be reported as not making satisfactory progress. If enrollment status is altered in any way, the VA will be notified and an overpayment may be charged against the veteran. For complete details and information, contact the Veteran Affairs Office at (314) 516-5548.

University Health Services, Wellness, and Counseling Services (UHWCS)

UHWCS provides services to students, faculty and staff from a holistic perspective with consideration given to the six dimensions of wellness. Our primary objective is to assist students in maintaining their optimum level of wellness so that they are able to achieve their maximum academic potential. Services provided are organized into three major areas within UHWCS: Health Services, the Wellness Resource Center, and Counseling Services.

Health Services – 131 MSC-516-5671

<http://www.umsl.edu/services/health>

Services Offered: treatment of minor injury and illness, screening exams, immunizations, strep throat testing, pregnancy testing, well women's exams (including pap smear), birth control, flu shots, urinalysis, and allergy injections. Care is provided by Certified Nurse Practitioners who have collaborative practice agreements with local physicians. Consultation is offered on various issues and concerns, including chronic health problems. Assistance with referral to medical facilities is provided upon request and when necessary. Call or visit to schedule an appointment.

Immunizations: The University requires that students born after 1956 provide documented proof of immunity to measles and rubella, through current immunization records, or disease documentation by a health care provider. Meningococcal vaccine is required for students residing in campus housing. Tuberculosis (TB) screening is required for students in the following categories: lived for two months or more in Asia, Africa, Central or South America, Eastern Europe; health care workers and volunteers and employees of nursing homes, prisons or other residential institutions; or contact with a person known to have active tuberculosis. Immunization records should be sent to Health Services. Please refer to the immunization policy and form on the Health Services website.

Student Accident and Sickness Insurance Plan

Health services provides information and application forms for the Student Accident and Sickness Insurance Plan

Wellness Resource Center – 180 MSC – 516-5380

<http://www.umsl.edu/~wellness>

Staffed by the Coordinator of Alcohol and Drug Prevention, and a Health Educator/Certified Medical Assistant, the Wellness Resource Center provides educational activities, brochures, books, and videos to encourage responsible decision making. A variety of programs are sponsored by the Wellness Resource Center. A variety of programs are sponsored by the Wellness Resource Center. These include: smoking cessation consultation, classes, and support groups, alcohol issues support groups, sexual assault awareness, and Safe Spring Break. The Center also coordinates the Partners in Prevention Program for the campus.

Various outreach activities take place every semester for the purpose of providing information, raising awareness, and encouraging healthy lifestyle choices. Examples are: *Breast Cancer Awareness, AIDS Awareness, Health Health, Men's Health, Women's Health, Diabetes Awareness, Asthma and Allergies, Cancer, Sexual Responsibility, How to Stay Healthy While in College, Surviving Final Exams, Meningitis, TB Skin test, Flu, and Hepatitis Vaccine Information and Immunization Opportunities, HIV testing, CPR and First Aid classes.* In addition, blood drives held each semester offer students an opportunity to give back to their community.

The Wellness Program provides an opportunity to take a health risk appraisal, explore the six dimensions of health, and get assistance with developing a personal wellness plan, which includes nutritional assessment and assistance with diet/nutrition management along with blood pressure, cholesterol and body fat percentage measurement. Resources and consultation specific to the personal

wellness plan are provided including suggestions for exercise, and stress management.

WAVES (Wellness Advocates Volunteering to Educate Students): University Health, Wellness, and Counseling Services Peer Education group. This group is comprised of students who work to educate the campus community, especially students, about making health lifestyle choices with regard to a variety of issues. This group gives students involved the opportunity to make a difference in the health and wellness of fellow students while increasing their own knowledge on health and wellness issues. Applications may be downloaded from the Wellness Resource Center website.

Counseling Services – 126 MSC – 516-5711

<http://www.umsl.edu/services/counselor>

Counseling Services Can Help:

- **Manage stress**
- **Build self-confidence**
- **Set priorities**
- **Build relationships**

Services offered include:

Personal Counseling

Personal counseling can help you navigate through times of stress and/or overcome barriers to your success. It often helps to discuss issues with someone who is objective and can help you look at yourself from a new angle. Our approach is to focus on your strengths and help you to help yourself. Some of the common issues for which students seek counseling include stress/anxiety, increasing self-esteem, relationship or family issues, loss and grief, a history of abuse, depression, etc. We take the confidentiality of your contacts with us very seriously. Except for the case of very extreme situations, both the content of counseling sessions and the fact that a student has used our services are kept strictly confidential.

Workshops and Presentations

Counseling Services offers special programs and workshops on a variety of topics throughout the year. Students groups and departments are invited to call us for speakers on such topics as study skills, text anxiety, assertiveness, health relationships, dealing with difficult people, personality styles, etc.

Student Opportunities

Graduate students in Counseling, Psychology, or a related field are invited to apply for our internship/practicum program. Interested students should contact Dr. Lori Tagger, at (314) 516-5711.

Scheduling Appointments

The Counseling Services receptionist will be glad to arrange an appointment for you to meet with a counselor. Call (314) 516-5711 or drop by MSC. In an emergency, students can usually be seen immediately.

Institutional Safety

The mission of the University of Missouri-St. Louis police department is to work cooperatively with the university community and within the framework of the Constitution, enforce the laws, preserve the peace, and provide a safe environment for the campus.

The police department an internationally accredited department is committed to professional management and to providing services in a manner that is responsive to community concerns. It pledges to be sensitive to the needs of those it serves.

The police department located in the TeleCommunity Center serves the students, faculty, and staff by providing year-round campus security. The police are trained to give emergency aid in the event of accident or illness. All incidents should be reported immediately to the police department, telephone (314) 516-5155. A "911" phone number is available on all phones with a 516 prefix and should be used for emergencies only. These numbers are monitored 24 hours a day. Call for help or to report fire or any hazardous conditions. Emergency telephones on campus include the red A Hot-Line phones, which are located in every building. In addition, there are a number of outdoor emergency phones that connect directly to the police dispatcher. Also tips on crime prevention and other useful publications are available outside the police department office.

An escort service is available 24 hours a day by calling (314) 516-5155. All members of the campus community are strongly encouraged to call the police for an escort if they feel uncomfortable walking to their car at night. For information regarding services, contact the police by calling (314) 516-5158, Monday through Friday, 8 a.m. to 5 p.m. For emergencies, call (314) 516-5155 or 911.

Parking and Transportation

Traffic regulation is the responsibility of the Parking and Transportation Department, including issuance of faculty, staff and guest permanent and temporary parking permits. These permits may be picked up at the Parking and Transportation office, located at 7700 Florissant Road, (314) 516-4190. Information on traffic regulations, parking, and campus maps can be obtained at their web site:

<http://www.umsl.edu/%7Eeasd/parkingandtransportation/contact.html>

The parking and transportation department provides limited emergency vehicle service, at no charge, to vehicles on campus. Any person requiring such service (due to dead battery, empty fuel tank, flat tire, etc.) should call (314) 516-5155 for assistance.

Academic Resources

Center for Academic Development

CAD is an academic support and assessment unit that focuses attention on the needs of UM-St. Louis students seeking success in their coursework. The center is comprehensive in nature and offers the following services:

The Writing Lab

This lab offers tutorial assistance to students working on papers for their classes. No appointment is necessary, and tutors are prepared to help both undergraduate and graduate students in all the disciplines. Issues covered in the lab include organization, sentence clarity, development, grammar, and usage. The Writing Lab offers IBM computers for student use, and tutors provide computer assistance. There is no charge for any Writing Lab service.

English-as-a-Second Language Program (ESL)

The center is the administrative home for the English as a Second Language Program. The program provides assessment and supplementary ESL courses for international students. Courses are listed under the Foreign Languages and Literatures Department.

Mathematics Lab.

This lab offers individual assistance on a walk-in basis to students needing help with any mathematics from basic math through calculus or needing help with the mathematical skills required for a course in another discipline. The Math Lab contains a small computer lab. Students or prospective students who are preparing to take the Mathematics Placement Test or C-Base Exam may come to the lab for help. Review materials for the C-Base Exam are available on general reserve in the Thomas Jefferson Library. Practice math placement exams are available at the University's home page under: math placement information/math practice tests. There is no charge for any math lab service.

Math Precollegiate Courses

The center provides assistance for students needing to improve their skills in mathematics. A three-credit hour (not toward a degree) course in Intermediate Algebra and a zero-credit workshop in Beginning Algebra are offered as semester-long lecture classes or as independent study courses with flexible beginning and ending options. Schedules for the courses can be found in the current *Schedule of Courses*.

Assessment Center

The center provides a controlled environment for students to take make-up exams or to test under conditions where special accommodations are needed and authorized. Students unable to take campus level exams (e.g. Math Placement, Academic Profile) in regularly scheduled group sessions may take them in the center for a fee. All testing is by appointment. Call (314) 516-6396.

Tutor Referral Services

Students desiring a private tutor for a particular course should check with the appropriate academic department for a list of tutors. Some tutor names and phone numbers can be found on the tutor referral list Web site under the tutor referral services on the campus home page. Times and costs are arranged by student and tutor.

Multicultural Relations

The Office of Multicultural Relations was designed to support the University's goal of academic success and student retention. Cognizant of the unique challenges facing the minority population, Multicultural Relations works to enhance and promote academic success for these students. It provides and directly links students to such services as new student orientation, mentoring, tutoring, academic counseling, career exploration, and leadership development. Workshops and seminars are held to foster a larger awareness of the University and its resources. Students meet with counselors to work on individual academic plans and are assigned tutors if necessary. The web site is <http://www.ums1.edu~mcraa/mcraa.html>. The phone number is (314) 516-6807.

Division of Student Affairs

Office of the Vice Provost for Student Affairs

The Office of the Vice Provost for Student Affairs, located in 301 Woods Hall, 516-5211, offers assistance and a wide variety of services to students. The office is responsible for administering the Student Conduct Code, confidentiality of student records, and the Discrimination Grievance Procedure for Students.

Disability Access Services

Located in 144 Millennium Student Center, Disability Access Services provides information, guidance, referral services, and assistance for students with disabilities. Special arrangements and assistance in providing for the accessibility needs of students with permanent or temporary disabling conditions are available through this office. A TDD is available for individuals who are deaf or have hearing loss. For more information or questions, call (314) 516-6554 (voice) or (314) 516-5212 (TDD). Additional information is available at the Web site: <http://www.umsl.edu/services/disabled/>.

The Division of Student Affairs is a recipient of a federally funded Student Support Services TRIO Grant to provide individual specialized educational services to 125 students with disabilities. The SSS grant project offices are also located in 144 Millennium Student Center, telephone number (314) 516-6554 (voice) or (314) 516-5211 (TDD). Applications for this program are available in 144 Millennium Student Center. Web site: <http://www.umsl.edu/~sss/>

Provisions for Auxiliary Aids, Reasonable Accommodations, and other Services to Students with Disabilities

The University of Missouri is committed to equal educational opportunities for qualified students without regard to disabling condition. The university, therefore, will take necessary action to ensure that no qualified student with a disability is denied access to any particular course or educational program. Such action includes an assessment of the student's abilities and an evaluation of the requirements of the particular course or program.

If the university determines that some type of auxiliary aid is required, it will assist the qualified student with a disability in obtaining the necessary auxiliary aid from other sources. If the necessary auxiliary aid is not available from other sources, the university, at its option, will provide the necessary appropriate auxiliary aid.

Requests for the assessments must be made to the director of Disability Access Services no later than six weeks prior

to the beginning of the next semester. If an unfavorable determination is made, the student may appeal the decision. See Discrimination Grievance Procedure, Appendix.

The university will make reasonable modifications to its academic requirements, if necessary to comply with legal requirements ensuring that such academic requirements do not discriminate or have the effect of discriminating on the basis of a student's known and adequately documented disability, unless the requested modification would require alteration of essential elements of the program or essential elements of directly related licensing requirements or would result in undue financial or administrative burdens.

The divisional dean's office, in cooperation with the director of Disability Access Services and the department through which the requirement is fulfilled, will determine the appropriate modification or substitution.

*See Executive Order 21, Policy Related to Students With Disabilities, in the Appendix section for further information.

Admissions

The Office of Admissions is located in 351 Millennium Student Center, (314) 516-5451. Admissions is generally the first point of contact for prospective students who require information and assistance as they go about planning for the college decision process. The Office of Admissions arranges tours of campus, sponsors open houses throughout the year for both first-time freshmen and transfers, and processes admission applications. Prospective students and families as well as applicants can arrange to meet personally with admission counselors. Counselors can provide information on applying for financial aid and scholarships, placement tests, and new student orientation.

Office of Transfer Services

The Office of Transfer Services, a unit of Student Affairs offers a broad range of support services to the diverse population of students who transfer to UM-St. Louis from other institutions and those who are returning to complete their course of study. The Office is here to provide resources to students as they enter the University and to be a "home" for students as they complete their baccalaureate studies at UM-St. Louis. The location of the Office of Transfer Services is 225 Millennium Student Center. The hours are 8:00 a.m. to 7:00 p.m., Monday-Thursday and 8:00 a.m. to 5:00 p.m. Fridays. The phone number is (314)516-5162. Web address: <http://www.umsl.edu/services/transfer/index.html>. E-mail address is: transferservices@umsl.edu

Registrar/Registration/Records

The Office of the Registrar is located in 351 Millennium Student Center, (314) 516-5545 and the website is: <http://www.umsl.edu/~register/>.

This office is responsible for registration, academic records, grades, transcripts, enrollment verification, veterans certification, change of name and/or address, ordering diplomas, and many other enrollment-related services. No appointment is needed for service, and hours are convenient to both day and evening students.

Center for Student Success

The newly created Center for Student Success is located in the Millennium Student Center, Room 225, (314) 516-5300. College students face many challenges unique to the college academic experience and are bound to have questions or concerns. The Center is committed to helping students deal with academic concerns, connect to campus resources and meet educational goals. The mission of the Center is to promote the collegiate success of students by providing academic support in an intellectual setting which delivers quality advising, facilitates choice of major and career directions, and promotes student satisfaction with, integration in, and adjustment to the university community. The Center for Student Success is a collaborative effort between Career Services, Disability access Services and Student Support Services and the former University Advising Center. Hours are 8:00 a.m. to 7:00 p.m., Monday-Thursday; 8:00 a.m. to 5:00 p.m. Fridays. The web address: <http://www.umsl.edu/services/css/>. Email: css@umsl.edu

Degree Audit

The Degree Audit office, 351 Millennium Student Center, (314) 516-6814, provides an automated record (DARS report) which reflects a student's progress toward degree completion. This report is very useful in planning a major, tracking graduation requirements, and investigating other areas of study. DARS reports are available from a student's academic adviser, who will assist in the interpretation of the audit as well as online through the STARUMSL system.

Student Financial Aid

The Office of Student Financial Aid is located in 327 Millennium Student Center, (314) 516-5526. The staff in this office assist students with applying for financial aid, including scholarships, grants, loans, and work study. The office is open various hours to accommodate both day and evening students. Appointments are not necessary.

Student Financial Aid Programs

The University of Missouri-St. Louis maintains an Office of Student Financial Aid to assist students with the cost of their education. Financial assistance is available in the form of grants, loans, scholarships, and work-study. Funds for these programs are available from federal, private, state, and institutional resources. To apply for financial

aid, students must complete a Free Application for Federal Student Aid (FAFSA). Preference will be given to those students who have completed the FAFSA by April 1. Preference means that the Student Financial Aid Office

will begin awarding FWS (Federal College Work-study), Federal SEOG (Federal Supplemental Educational Opportunity Grant) and Federal Perkins Loan funds. A completed financial aid application means that the Financial Aid Office has received an official Student Aid Report from the Federal Processing Center.

The Student Financial Aid Office maintains a Web site at www.umsl.edu/services/finaid, where students will find useful information along with the ability to contact the office electronically via e-mail. Also included is a scholarship directory that is updated biweekly.

To be considered for all university scholarships offered through the Financial Aid Office, a student must be accepted for admission. A scholarship application must be completed to apply for scholarships awarded through Student Financial Aid. All incoming freshmen should complete the Incoming Freshman Scholarship Application. Continuing students should complete the Continuing Student Scholarship Application.

Students are encouraged to contact the department in which they are majoring for other possibilities for scholarships.

Office of Residential Life

Located in 101A Provincial House, (314) 516-6877. The Office of Residential Life offers on-campus housing to students year-round. The Office of Residential Life offers air-conditioned, furnished residence halls, in which 93 percent of rooms are singles. Contracts for 9 and 12 months are available. Residence Hall rates include all utilities, local phone service with six features, cable microfridges (combination refrigerator and microwave), data communications hook-ups in each room, and a tax-exempt declining-balance meal plan. The halls also offer a large swimming pool, as well as laundry facilities, kitchenettes, and common TV lounges. All residence halls are located on the free campus shuttle route.

For students who are at least 21 years of age, Mansion Hill condominiums offer one-and two-bedroom unfurnished apartments conveniently located adjacent to the campus. The complex is on the free campus shuttle route and offers swimming pool, picnic areas, recreation areas, and laundry facilities. Rent is billed to the university account of UM-St. Louis student residents.

A variety of social, cultural, and educational programs and activities are offered by the Office of Residential Life and the Residence Halls Association. As one of the most active and visible student organizations on campus, RHA serves as the student voice for residence hall students, providing

leadership opportunities and activities both on- and off-campus. Residential students are active in intramurals, student organizations, campus leadership positions, and other university activities. Tours of the UM-St. Louis residence halls and campus operated-housing are available by calling (314) 516-6877.

Office of Student Life

The Office of Student Life, 366 Millennium Student Center, advises and serves as a facilitator for programs and services provided to 120 recognized and registered student organizations at the University of Missouri-St. Louis. The director of Student Activities serves as a nonvoting chairperson for the Student Activity Budget Committee, which allocates operating budgets to organizations approved for funding.

The Office of Student Life directs the campuswide orientation program so that students can become acquainted with university rules, procedures, and services. For more information call (314) 516-5291.

In conjunction with the University Program Board, the Office of Student Life sponsors a diverse series of educational, cultural, recreational, and social programs, services, and activities which complement the academic mission of the campus and attend to developmental needs of students at UM-St. Louis.

The office serves as a resource for students desiring information about any student organization on campus and will actively assist any student wishing to participate in any student organization or program on campus.

E-Mail: studentlife@umsl.edu Web Page:
<http://www.umsl.edu/studentlife>

Organizations

There are approximately 120 student organizations at UM-St. Louis ranging in size from 13 to 500 members. Their activities address the educational, cultural, social, recreational, and spiritual cocurricular needs of the campus community. Social fraternities and sororities, performing and fine arts, curriculum-related support groups, ice hockey, bowling, and other special interest clubs enhance the collegiate experience. The Associated Black Collegians, International Students Organization, and Women's Center serve as resources for students on campus. Information regarding student organizations is available in 366 Millennium Student Center. Specific organizations may be contacted by mail through the same address.

The University Program Board, a volunteer group, initiates and implements a variety of lectures, and appearances by comedians and musical groups throughout the year. The board also sponsors games, tournaments, and discounted tickets for local sporting events, concerts, and theater. Most campus events are free to the campus community and

are subsidized by student activity fees. Membership in this organization is open to students who are interested in coordinating these types of programs. Information is available by calling (314) 516-5291 or by stopping by the Office of Student Life in 366 Millennium Student Center.

Student Government

Student Government Association

The Student Government Association (SGA) of the University of Missouri-St. Louis is the student governance body composed of both elected student representatives from each school and college, and of organizational representatives from every recognized student organization which petitions for representation on the assembly.

The purpose of the SGA is to represent University of Missouri-St. Louis student concerns at every level of governance within the University. This is done by ensuring adequate and capable student representation within the University Senate, the policy-making and governance body of the University of Missouri-St. Louis. SGA has its own standing committees to address student concerns. For more information call (314) 516-5105 or drop by 366 Millennium Student Center.

Student Court

The Student Court is nominated by the SGA. The five-member court rules on student appeals concerning matters such as disputes between individuals and organizations, or organizations and organizations, as well as traffic parking appeals.

Faculty Senate and University Assembly

The governance structure at UM-St. Louis was substantially reorganized during the 1999-2000 academic year. The governance structure was approved by the Faculty on January 26, 2000 and the Board of Curators on March 23, 2000.

The Faculty Senate has 40 faculty members, 30 representing departments and 10 elected at large. In addition, three administrators are non-voting members. The University Assembly consists of all Senate members (40), 13 students and five administrators including the Chancellor, Vice Chancellors for Academic Affairs, Research and the Graduate School, Student Affairs, and Continuing Education. In addition, three other vice chancellors, all the academic deans and the President of the Student Government Association are non-voting members. The Faculty Senate meets monthly between September and May and the Assembly meets in alternate months during the year. Information about the Faculty Senate and University Assembly is available at: <http://www.umsl.edu/committees/senate>.

Athletics

Recreational Sports

The University's recreational sports program is geared toward the interests of the entire University community. Students, faculty, staff, and alumni are encouraged to take active roles in the creation of new recreational sports programs.

Intramural activities currently offered include touch football, basketball, volleyball, racquetball, golf, tennis, bowling, softball, hoc soc, fun run, soccer, indoor floor hockey, and weight lifting. For more information call (314) 516-5125.

Intercollegiate Sports

A variety of intercollegiate sports are available for both men and women at UM-St. Louis. The Rivermen and Riverwomen compete at the NCAA Division II level and are members of the Great Lakes Valley Conference. The women's intercollegiate athletic program includes basketball, soccer, tennis, volleyball, golf, and softball. The men's intercollegiate athletic program includes basketball, soccer, golf, baseball, and tennis. Scholarships are available for both men and women in all sports. Both men's and women's athletic teams have brought both local and national recognition to the university for more than 20 years, with one national championship and numerous trips to the NCAA Tournament in several sports. UM-St. Louis students with validated IDs are admitted free to all home athletic contests.

For more information about intercollegiate athletics, please call (314) 516-5661.

Facilities

The athletic and exercise areas in the Mark Twain Building are available for use by the university community at specified hours. During the regular semester, the building is open seven days a week and on specified evenings. Facilities include basketball, volleyball, badminton, and handball/racquetball courts, an aerobic dance room, and an NCAA regulation swimming pool.

The facilities also include two conditioning and fitness rooms with state-of-the-art equipment, an indoor running track suitable for walking or running, and a sauna. Outdoor facilities include baseball, softball, soccer, intramural fields, and tennis courts. For further information call (314) 516-5641.

Other Services

Alumni and Constituent Relations Office

UM-St. Louis alumni, now numbering more than 62,000, help shape the future of not only the university but the entire St. Louis region. The Alumni Association and the Office of Alumni and Constituent Relations work together to promote the St. Louis campus and build mutually beneficial relations between the university and its alumni and friends.

Membership in the Alumni Association is open to all graduates and former students with payment of modest dues.

Alumni Association

The Alumni Association sponsors several scholarship funds for UM-St. Louis undergraduate and graduate students, provides special funding of certain campus projects, and works as an organization to obtain increased public support for the university. For more information, call (314) 516-5833.

Alumni Center

A historic and elegant setting, the Alumni Center, located at 7956 Natural Bridge Road across the street from the main campus entrance, offers students, faculty, staff, and alumni a gathering place for community receptions and other social events. Contact the Alumni Center at (314) 516-5722 for more information and reservations.

Career Services

Career Services works in partnership with employers and the campus community by helping students and alumni to develop, implement, and evaluate job search strategies.

Career Readiness/Coaching, Career Counseling & Exploration and other programs are available to all degree seeking students and recent graduates of UM-St. Louis. Career Services hours are Monday through Thursday, 8 a.m. to 6 p.m. and Friday, 8 a.m. to 5 p.m. For more information, call (314) 516-5111, or visit 278 Millennium Student Center.

Career Readiness/Coaching

Make an appointment with a Career Specialist to get assistance in your job search. A professional is available to assist in guiding students and alumni in the job search for internships/co-ops and full-time degree-related positions.

Career Counseling & Exploration

Meet with a staff member to evaluate your career development. Career development services are designed to help you with choosing a major and/or career. We offer career assessments, on-line resources and individual assistance to guide you in your career decision-making. www.umsl.edu/career; Visit our website to access a variety of job search related information. Click on the Occupational

Outlook Handbook to get job outlook information, access "What can I do with this major?" to help connect majors with careers, review salary survey information, and link to numerous job search related links.

Job Leads

We have a web-based software system that enables students and alumni to conduct a job search on-line 24/7. You will have access to job leads (internships,co-op, part-time degree-related and full-time degree-related positions), on-campus interview opportunities and resume referrals to employers. There is a \$35.00 initial registration fee; renewal is \$10.00. This fee covers the cost of activation for individual access to the web-based software.

On-Campus Jobs

Career Services assists students with connecting to on-campus job opportunities (jobs posted through the federal work-study program and jobs posted by individual departments that are open to all students).

Job Fairs

Career Services holds four annual job fairs; UMSL Summer Teacher Job Fair in July (for teaching candidates); UMSL Fall Internship & Job Fair in September (for all majors); UMSL Teacher Job Fair in February (for teaching candidates); UMSL Spring Internship & Job Fair in March (for all majors). Admission is free to UMSL students/alumni who pre-register.

Weekly Workshops

Register on-line for workshops related to the job search process, including Resume Writing, Interviewing Skills, and Job Search Strategies.

Special Programs

Other special programs are held throughout the year. This includes Classroom & Student Organization Presentations, Etiquette Banquet, Resume Mania Week, and Job Search Strategies Teacher Panel.

Career Experience and Employment Program

The Career Experience and Employment Program combines classroom studies with work experience in a field related to education and career goals. These degree related positions offer students an excellent opportunity to gain professional job experience and earn money to help with expenses while in school. Through this program, students begin to understand what career choices they might make, gain valuable contacts in their field, and, in many cases, get paid for their work. They graduate with a college degree and an impressive resume. Throughout this program, Career Services, and academic departments work with students and employers to ensure that positions are linked to curriculum and career development. These work arrangements are

available to UM-St. Louis students at all levels in all majors. Contact Career Services for more information at (314) 516-5111, or visit 278 Millennium Center.

Following is an overview of internships and practicums available through various academic departments:

College of Arts & Sciences

Anthropology

4325-4329, Internship in Cultural Anthropology, Archaeology, Folklore, Museum Studies, Physical Anthropology - elective, for credit; placement with outside organizations; junior standing required. Positions available on competitive basis as lab and research assistants, teachers/facilitators, and interns/assistants - optional, noncredit.

Human Origin and Cultural Diversity program offers internships in educational anthropology and diversity education.

Biology

3699, Undergraduate Internship in Biotechnology - optional as part of certificate program, for credit or noncredit, enrollment in certificate program required.
4299, Practicum in Conservation - required as part of certificate program, for credit, enrollment in certificate program required.

Chemistry and Biochemistry

Opportunities are available to pursue research with faculty members for credit during the academic year. Normally requires enrollment in Chemistry 3905. Stipend available in some cases. Expanded opportunities available in the summer through the Research Experience for Undergraduates Program, which is typically funded by the National Science Foundation and local industry. In some cases students may conduct Chemistry 3905 research at a local company through collaborative arrangement between a faculty members and an industrial chemist.

Criminology and Criminal Justice

3280, Internship in Criminology and Criminal Justice - elective, for credit.

Economics

4990, Internship in Applied Economics; not required; 3 hours maximum.

English

4890, Independent Writing Project - internships offered in areas such as journalism, public relations, advertising, publishing, and technical writing; for credit, enrollment in Writing Certificate Program required.

Foreign Languages and Literatures

Positions as tutors in language lab available on a competitive basis - paid, noncredit. Students of German can apply for summer internships abroad through the German-American

Student Exchange Program - noncredit. Information available in department.

History

4001, Special Readings - internships occasionally available with historical agencies; department chair and/or undergraduate coordinator must approve to obtain credit.

Mathematics and Computer Science

Career-related work arrangements for students majoring in math and/or computer science are primarily administered through Career Services located in 278 Millennium Student Center. These positions are paid and non-credit-bearing.

Physics and Astronomy

The department funds research internships in the department in both physics and astronomy. The awards are competitive, and preference is given to students who have completed the Physics 2111/2112 sequence.

Political Science

3940, Public Affairs Internship - required, for credit, for bachelor of science in public administration program. It may also count as an elective, for credit, within the bachelor of arts in political science program and is open to all majors. Placements include municipal, state, and federal governmental agencies, nonprofit organizations, courts, and political campaign offices.

Psychology

3295, Selected Projects in Field Placement - elective, for credit.
3390, Research Assistant

Social Work

4800 and 4850, Supervised Field Experience in Social Work I and II - required, for credit, enrollment in B.S.W. program and prior consent of instructor are required

Sociology

4385, Internship in Sociology - elective, for credit.

College of Business Administration

Career Services works in partnership with the College of Business Administration to assist students in securing career-related work arrangements for students majoring in all areas of business. These positions can be paid or unpaid and credit bearing or non-credit bearing. Those students choosing to receive academic credit through one of the courses listed below must contact the College of Business Administration Internship Coordinator.

BA 3090, Internship in Business Administration

BA 3289, Internship in International Business

BA 3390, Internship in Logistics & Operations Management

BA 3490, Internship in Accounting

BA 3590, Internship in Finance

BA 3690, Internship in Management

BA 3790, Internship in Marketing

BA 3890, Internship in Management Information Systems
BA 3990, Internship in Business Law

and other work arrangements available. Web site:
<http://www.umsl.edu/career>

College of Education

College of Education Student Teaching - required, for credit. Students enrolled in the Career Transition Program student teach in the St. Louis Public School District while teaching as a full time classroom instructor. Information can be obtained on the College website, under "Career Options." As well, students employed full time in districts are also able to complete student teaching. For more information, contact the Teacher Certification and Advising Office at Deborah_Ballard@ums.edu or at (314) 516-6710.

College of Fine Arts and Communication

Art

3387, Professional Internship for Art History majors only-elective, for credit

3388, St. Louis Art Museum Internship for Studio Art or Art History majors only – competitive position elective for credit.

Communication

1193, 1194, 1196, 1197, Practicum in Applied Communication, Debate/Forensics, Radio, and Television/Film - required, for credit. On-campus positions, as available.

3393, 3394, 3396, 3397, Internship in Applied Communication, Journalism, Radio, and Television/Film-elective for credit, Senior standing, 3.0 GPA, and faculty recommendation required; off-campus positions.

Music

4920, Internship – required, for credit, enrollment in bachelor of music business required. Department sponsored internships available for all majors at St. Louis area arts institutions.

Engineering

UM-St. Louis/Washington University Joint Undergraduate Engineering Program Career-related work arrangements for students majoring in all areas of engineering are primarily administered through Career Services. These positions are paid and non-credit-bearing.

College of Nursing and Health Studies

Clinical courses are required in both the undergraduate and graduate programs. These experiences are limited to nursing majors only.

Pierre Laclède Honors College

Internships chosen by Honors College students, or arranged by their major departments, are valuable opportunities to broaden educational experience while also meeting the honors independent study requirement for graduation.

Visit Career Services, 278 Millennium Student Center, or call (314) 516-5111 for more information on these programs

Specialized Centers and Facilities

Research Enterprise

Office of Research Administration

The Office of Research Administration (ORA) provides support services to faculty, graduate students, and staff seeking external grant funds for research, instruction, and service from federal, state, and local government programs, as well as private foundations. Several specialized research units report to the Office of Research Administration. In addition, the ORA facilitates technology transfer through assisting inventors in filing for patent applications, negotiating licensing agreements, and setting up start-up companies.

The ORA works together with faculty committees to award and administer internal research grants, including coordination of the University of Missouri Research Board competition, Research Awards, the Small Grants Funds, the Chancellor's Awards for Research and Creativity, and the Grants Incentive Funds. The ORA also works through faculty committees to monitor University compliance with various federal and state regulations for research.
<http://www.umsl.edu/services/ora/>

Center for Emerging Technologies

The Center for Emerging Technologies is a public-private-academic partnership, which includes the University of Missouri-St. Louis and the Missouri Department of Economic Development. The mission of the Center is to position the St. Louis region as an important center for advanced technology and knowledge-based economic development. The Center primarily functions as an incubator for startup companies. With 90,000 square feet space, it houses fifteen startup companies. Inventions that lead to the establishment of these startups often originate from university research laboratories and faculty and graduate students provide valuable expertise to these enterprises. In addition, the Center presents educational seminars to help entrepreneurs with legal matters related to patents and licenses, information on venture capital financing, and other business strategies. <http://www.emergingtech.org/>.

Missouri Enterprise

Missouri Enterprise is a non-profit statewide operation affiliated with the university. It assists small businesses with industrial, manufacturing, and design engineering projects; it helps in developing strategic business and marketing plans; and in setting up performance evaluation. Missouri Enterprise specialists advise businesses on all aspects of their operations, from tactical product promotions to complete, company-wide five-year business plans. Their services assist businesses in improving personnel management, safety, manufacturing efficiency, research funding, communications services and record-keeping, feasibility studies, and more.
<http://www.missourienterprise.org/>

Public Policy Research Center

The Public Policy Research Center at University of Missouri-St. Louis seeks ways to make communities more livable through improved public policies. The PPRC provides research services, programs, opportunities and expertise designed to foster university-community partnerships at the local, county and regional level. PPRC responds to community-identified needs with a multi-disciplinary approach to applied research and community and neighborhood development.

The PPRC endeavors to achieve its mission by:

- Undertaking objective basic and applied research.
- Serving as a regional information and data center.
- Sponsoring forums and seminars for debates and discussions.
- Publishing and disseminating policy briefs, issue papers, research reports, newsletters and books.
- Interpreting and preserving local history to help communities shape their future.
- Commenting on issues of public policy and identifying regional challenges and opportunities.
- Providing training and certificate programs for community and government leaders and professional organizations.
- Partnering with civic, governmental, non profit, and other agencies, as well as with individuals

The PPRC undertakes these tasks by developing partnerships with local, county, regional and state governments and agencies, nongovernmental organizations, and citizen's groups. It also promotes policy research through faculty and community fellowships. PPRC also serves as a policy laboratory for a number of graduate students participating in research and outreach activities.

PPRC is organized around three units: Applied Research, Community and Neighborhood Development, and Metropolitan Information and Data Analysis Services (MIDAS). It also curates regularly changing community photography exhibits.

<http://pprc.umsl.edu>

Center for Business and Industrial Studies

The Center for Business and Industrial Studies is organized within the College of Business Administration for studying managerial problems and performing applied research. The center operates on a not-for-profit basis, helping organizations nationwide to understand factors affecting their business environments and to enhance their productivity. University faculty, supported by powerful computer systems, statistical databases, and sophisticated software, provide multidisciplinary consultation in a wide variety of business applications. Studies are undertaken in computer systems, operations management, human resources management, planning and business development, facilities location, distribution, marketing, and financial analysis. Organizations contract with the center for studies tailored to their specific

needs. For a brochure outlining the center's services, call (314) 516-5857.
<http://www.umsl.edu/divisions/business/ncbis/cbis.html>

Center for Transportation Studies

This center is an interdisciplinary center, bridging contemporary and historical aspects of transportation. It brings together scholars from Business, History, Economics, Political Science, English, Art History and others. The Center is pioneering a new program in Supply Chain Management, developing funds for research into the role private sector transportation plays in the provision of public transportation services. <http://www.umsl.edu/depts/cts/>

Center for Entrepreneurship and Economic Education

The Center for Entrepreneurship and Economic Education is sponsored by the College of Arts and Sciences and the Division of Continuing Education to support and enhance economic, financial and entrepreneurship education in elementary and secondary schools. The center provides in-service programs for area teachers. Working closely with local school districts, the center serves to improve and evaluate economics curriculum. The center develops and publishes curriculum units for K-12 classrooms. The center also promotes the goals of economic, entrepreneurship and personal finance education among business, professional, educational, labor, and other organizations and individuals in the St. Louis community. <http://www.umsl.edu/~econed/>

International Center for Tropical Ecology

The International Center for Tropical Ecology promotes education and research concerning the study of biodiversity, conservation, and sustainable use of tropical ecosystems. The center was established to centralize the activities of faculty at UM-St. Louis and researchers at the Missouri Botanical Garden and the Saint Louis Zoo who specialize in ecology, evolution, systematics, and conservation biology. A priority is to provide funding for graduate students interested in tropical biology and conservation who are enrolled in the cooperative graduate program between UM-St. Louis, the Missouri Botanical Garden and the Saint Louis Zoo. The International Center for Tropical Ecology sponsors multidisciplinary lectures and symposia on biological, political, and cultural issues related to tropical ecosystems. The center also provides funding and assistance to the undergraduate Certificate in Conservation Biology, which focuses on Missouri conservation, and the graduate certificate in Tropical Biology and Conservation. For further information visit the ICTE Web page: <http://icte.umsl.edu>.

Center for Molecular Electronics

Molecular electronics lies at the cutting edge of recent developments in the study and application of thin-film materials, the growth of semiconductor device material, the fabrication of electronic sensors and devices, and the development of high-performance polymers. In all these areas, knowledge and control at the atomic or molecular level is essential for state-of-the-art materials and devices. In recognition of the critical importance of research, education,

and industry-university cooperation in these areas, the University of Missouri-St. Louis has established the Center for Molecular Electronics. The goals of the center are both research at the forefront of the field of molecular electronics and assistance in development of high-technology products by St. Louis-area corporations. To encourage cooperation between university and corporate scientists and engineers, the membership of the center includes physicists, chemists, and engineers from the University of Missouri-St. Louis, Washington University, MEMC Electronic Materials, and Monsanto Company. <http://www.umsl.edu/~cme/>

Center for Neurodynamics

This center sponsors basic research on transmission and processing of information by the brain and the sensory nervous system. Research functions are performed largely by faculty, graduate students, and postdoctoral research associates, though exceptionally talented and motivated undergraduate students also make valuable research contributions. The center is interdisciplinary, composed of faculty from the departments of Biology and Physics and the College of Optometry. It maintains a program of external associates with whom collaborative research projects are pursued. Current associates are in Baylor College of Medicine, Houston, Texas; the Department of Biomedical Engineering, Boston University, Boston, Mass.; and Viotech Imaging Inc., Ivoryton, Conn. The center is host to frequent scientific visitors and maintains an active program of seminars on contemporary problems in neuroscience and in the physics underlying neural processes. For further information consult the URL <http://neurodyan.umsl.edu>.

Missouri Research Park

The University of Missouri System Strategic Plan establishes a mission and goal to promote economic growth for the state and provide assistance in manpower training, technology transfer, innovation and research and development through productive partnerships. The Missouri Research Park is a result of that vision and has been the catalyst for high-tech development along the Hwy. 40/61 corridor in St. Charles County. Major corporations have followed the trend and are clustering near the Missouri Research Park. <http://www.umtechparks.com/home.html>

Center for Trauma Recovery

CTR is a multi-disciplinary center of the University of Missouri-St. Louis whose purpose is to foster research, graduate and undergraduate education, and service in the areas of trauma and victimization. The Center consists of faculty affiliates from six departments in the University who have research, teaching or service interests in trauma related topics. These individuals share a common set of goals. The Center sponsors a colloquium series every semester and offers an undergraduate certificate in Trauma Studies. The CTR is housed in the Kathy J. Weinman Building which also contains the Weinman Child Advocacy Center that provides services to traumatized children. <http://www.umsl.edu/divisions/artscience/psychology/CTRHome.html>

Children's Advocacy Services of Greater St. Louis (CASGSL)

The Children's Advocacy Services of Greater St. Louis provides services to children who have been sexually abused. The organization offers forensic fact-finding interviews; medical exams; victim advocacy, individual, family and group therapy; and training for the community at-large and area professionals. Internships for undergraduate and graduate students are available. Children's Advocacy Services has two facilities: one is located on the University of Missouri-St. Louis South Campus and one is located in the Central West End.

<http://www.safekidsmo.org>

Centers Providing Public and University Service

Blanche M. Touhill Performing Arts Center

Now beginning its fourth season of presenting the finest in the performing arts to the St. Louis region, the Blanche M. Touhill Performing Arts Center opened its doors in September 2003. The \$52 million non-profit facility designed by the architectural firm of internationally renowned I. M. Pei features the 1,625-seat Anheuser-Busch Performance Hall and the 350-seat E. Desmond and Mary Ann Lee Theater. The Touhill is the jewel of the UM-St. Louis campus and is a focal point for creating an arts district for students at the University.

The Touhill's mission is laid out in the following statement: The Touhill Performing Arts Center at the University of Missouri-St. Louis creates opportunities for the people in our region to experience, appreciate and embrace the transformational power of the performing arts. It is a welcoming place, a leading cultural partner in our community and a symbol of this University's commitment to integrate education, innovation and excellence. More information about the Touhill can be found at www.touhill.org

Child Development Center

The Child Development Center, 130 South Campus Classroom Building, provides high-quality day programs for children of students, faculty, staff, and community families. The center is accredited by the Academy of Early Childhood Programs, a division of the National Association for the Education of Young Children, one of 24 accredited programs in the St. Louis area. The program operates from 7 a.m. to 5:30 p.m. Monday through Friday, year round. The center offers evening child care to UM-St. Louis students and faculty during the fall and winter semesters. The center is open Monday thru Thursday from 5:00-9:00 p.m. Children aged 3-11 years old are eligible. This program serves children from six weeks to five years of age. The center also provides university students with observation, participation, research, and similar educational and clinical opportunities. Call the center at (314) 516-5658 for additional information.

Center for Human Origin and Cultural Diversity

The Center for Human Origin and Cultural Diversity was founded in Fall, 1995 as a joint venture between the Anthropology Department, and the May buye Center (Archive of the African National Congress) at the University of the Western Cape, South Africa. Building on the foundation of anthropological knowledge, the Center will design a K-12 curriculum. Currently, no comprehensive anthropology curriculum exists in the U.S. Programs are also offered in conjunction with the Gerontology Program and the Missouri Historical Society.

Center for the Humanities

The Center provides visibility and focus for humanities activities at UM-St. Louis and attracts and channels resources for support of interdisciplinary humanistic inquiry. The Center sponsors a variety of conferences, symposia, and lectures. For over a decade, the Center has sponsored an annual conference titled "What is a City?" that examines the structure and social environment of cities and their effects on social and cultural life. The Center sponsors the Monday Noon Cultural Series, which features a variety of humanities and arts presentations and performances. The Center also supports and coordinates the poetry and short story series, which showcases authors reading their original works. In addition, the Center houses and funds the journal *Theory and Society*, a refereed, interdisciplinary journal of social theory and practices, published by Kluwer Academic in The Netherlands. The Center disseminates information on the humanities on its Web site and promotes development of interdisciplinary outreach programs.

Center for International Studies

The Center for International Studies supports academic programs, seminars, and conferences designed to promote and improve research in international studies, improve methods of teaching international studies in schools and colleges, and encourage an interest in international affairs in the university and area communities. The center's Office of International Student and Scholar Services coordinates and provides services for international students and scholars including admissions, immigration, orientation, nonacademic advising, etc. In addition, the center administers the campus exchange and study abroad programs and disseminates information on study, work, and travel abroad. The center promotes the development of interdisciplinary and multidisciplinary courses, assists in staffing courses within individual departments, houses the Joint Center for East Asian Studies of UM-St. Louis and Washington University, the E. Desmond Lee Global Ethnic Collaborative, the Karakas Family Foundation Alliance for the Advancement of Hellenic Studies, and the Endowed Professorships in African/African-American Studies, Chinese Studies, Greek Studies, international education, Irish Studies, Japanese Studies, the German Culture Center, and the Greek Culture Center. It conducts seminars that address specific faculty and student needs and interests, sponsors conferences for academic and community audiences, organizes international

business development programs, sponsors an International Performing Arts series, issues occasional papers, administers undergraduate certificate programs in Africana studies, East Asian studies, European studies, Greek studies, international business, international studies, and Latin American studies and the Graduate Certificate in International Studies. In addition, the Center serves precollegiate educators statewide through the International Studies Resource Library and operates a comprehensive global education program.

Center for Teaching and Learning (CTL)

The CTL is a division of the Office of Academic Affairs that promotes student learning by offering programs and resources that support effective teaching and learning at the University of Missouri-St. Louis. Orientations, workshops, and seminars on research and teaching are designed to support the professional development of faculty (full-time and part-time), academic leaders, graduate students, and Teaching Assistants. The CTL co-sponsors programs with other campus units that augment the orientation programs, introduce technology supports for teaching and learning, and create campus conversations about timely initiatives such as student and civic engagement. Major CTL programs include:

- New Faculty Orientation in August
- New Part-time Faculty Orientation offered before the start of fall, spring, and summer semesters
- Teaching Assistants Conference and Workshop in August
- Academic Leaders Forum
- Fall Focus on Teaching and Technology Conference

The CTL coordinates two UM System initiatives on campus, the New Faculty Teaching Scholars Program and the Leadership Development Program and sponsors the implementation of the Faculty Survey of Student Engagement. Confidential classroom consultations and mid-semester online feedback for all courses are available each semester to all faculty. Additional information and current program offerings are available at <http://www.umsl.edu/ctl>

E. Desmond Lee Technology and Learning Center (TLC)

The TLC models a technology enriched classroom where theories and ideas are put into practice. The TLC is a resource for the community. Everyone is welcome to use the facility. Graduate students working in the center focus on research and assist in the development of effective uses of technology learning environments.

Information Technology Services

Information Technology Services provides students, faculty, and staff with an integrated array of voice, video, and data services, including consultation, programming, training and operational support.

Eleven Smart classrooms provide network-attached computers at each student station as well as an instructor station. High-resolution projectors and video/audio systems complete these facilities. There are also more than fifty media-enhanced lecture halls/classrooms with instructor stations as well as projection systems. These Technology

Enhanced classrooms provide faculty with electronic blackboards for lecture notes, and software demonstrations. Complementing these facilities are student computer laboratories in the Social Sciences Building, Thomas Jefferson Library, Benton Hall, and South Campus Computer Building where consultants are available to assist students with general operation and troubleshooting needs.

KWMU

90.7 KWMU-FM, is the 100,000-watt public radio station of the University of Missouri-St. Louis and National Public Radio/ Public Radio International affiliate. The professionally staffed station broadcasts news, talk, and entertainment 24 hours a day. KWMU provides programming that is responsive to the needs of the community. In training students who plan to pursue broadcast careers, KWMU augments the educational and training function of the university.

Regional Center for Education and Work

The Center initiates, promotes and supports programs that foster cooperation and information sharing among business, labor, social service and education for healthy long-term work force development and economic improvement for the St. Louis Region. The center will be a hub for regional research and planning in workforce development, employment trends and job forecasting. It serves as a resource to education, school counseling, labor force training and social service providers

The Faculty Resource Center (FRC)

The Faculty Resource Center (FRC), provides enhanced technical support to faculty, TA's, graduate students and support staff wishing to integrate technology into course content. These support resources include assistance in development of web-based material, assistance with online courses; the integration of video or graphics into course materials; training in the use of various instructional technologies; and access to networked workstations with software and media capabilities. For more information, please visit our web site at:

<http://www.umsl.edu/technology/frc> or call (314) 516-6704

My Gateway Site (<http://mygateway.umsl.edu>)

The My Gateway Site provides on-line course materials as well as many other features such as: class email, discussion forums, virtual chat, and address book, calendar, and task list. From this web site, you can access course and organizational information; find tools to communicate with students, professors and colleagues; link to Registrar's grades and schedules; and access links to other campus services.

The On-Line Testing Center

The On-Line Testing Center in the South Campus Computer Building, Room 200, provides new line computer-based testing services. The center is staffed seven days a week, offering both midday and evening hours, by a proctor that

assists the students in getting started with examinations and provides scheduling support.
<http://www.umsl.edu/technology/mgwhelp/fachelp/otc.html>

The Technology Support Center

The Technology Support Center located in 211 Lucas Hall (314) 516-6034 is available for students, faculty, and staff who have general questions regarding their accounts or use of campus resources. The Web office provides assistance for faculty and staff in developing Web pages.

University Eye Center

Located on the South Campus, the center is open to the public as well as to faculty, staff, and students of the university. Its goal is to provide patients with high-quality vision care and optometry students with diverse educational opportunities. The school also operates the Optometric Center, a comprehensive optometric eye care facility in the Central West End of the city of St. Louis, and the East St. Louis Eye Center, jointly owned and operated by the University of Missouri-St. Louis College of Optometry and Southern Illinois University at Edwardsville.

Division of Continuing Education

As the region's only public research university, UM-St. Louis serves students who are in many ways nontraditional in their demographic make-up, their approach to higher education, and their educational needs. Meeting the needs of these nontraditional students while extending the expertise of the university to the community is the mission of the Division of Continuing Education.

Through Continuing Education, the university's colleges, schools, and centers administer a wide variety of credit courses, noncredit programs, and problem-oriented research for the benefit of the greater St. Louis metropolitan area and beyond. Programs are offered both on and off campus and online. Research, generally of an applied, urban-related nature, is designed to solve specific problems of client groups.

Arts and Sciences

Continuing Education in the College of Arts and Sciences includes credit courses and noncredit programs from the college's departmental disciplines, including courses and workshops in the archaeology, microcomputers, writing, languages, history, and social and physical sciences. Interdisciplinary teaching and research programs deal with such fields as social work, the humanities, women's studies, and economics.

The Center for Entrepreneurship and Economic Education provides programs and curriculum consultations to local teachers and schools internationally.

The Microcomputer Program develops and teaches applied computer courses and offers the Chancellor's Certificate on the Computer, along with other certificate programs.

The Advanced Credit Program provides an enrichment experience for university-bound secondary students by providing freshman-level courses for credit in selected high schools.

The Gateway Writing Project offers credit and noncredit programs on writing improvement for classroom teachers.

Business Administration

Continuing Education credit and noncredit programs through the College of Business Administration are offered in multiple areas, including financial planning; training, facilitation and coaching best practices; organizational development; team leadership; human resource management; broad survey courses; a variety of short, targeted offerings; and customized courses designed to meet individual client needs. Several certificate programs are offered.

Education

The College of Education, which is accredited by the National Council for Accreditation of Teacher Education (NCATE) for the preparation of teachers, counselors, and administrators, offers an array of graduate and doctoral programs in education. Through the University's Division of Continuing Education, courses and programs are offered for both practitioners and those considering the field of education as a career. Many credit courses are available at sites throughout the metropolitan area, and professional development conferences and institutes are specially designed to help practitioners stay current in their fields of study. Programs also can be tailored to meet the specific needs of groups or organizations and can be offered on site or at other convenient places and times.

Fine Arts and Communication

The College of Fine Arts and Communication offers a variety of Continuing Education activities to the community. Four endowed professorships are focused on community outreach in the arts. The award-winning E. Desmond Lee Music Education Collaborative, and other collaborative activities undertaken by the College in conjunction with arts organizations in the greater St. Louis area, all contribute to the college mission. A range of credit and noncredit fine arts outreach programs are offered in partnership with the Saint Louis Symphony, Opera Theatre of Saint Louis, and the Muny.

Graduate School and Public Policy Administration

The Nonprofit Management and Leadership Program offers comprehensive education and training for professional staff, board members, and other leaders of nonprofit and voluntary organizations, as well as students and others wishing to explore a future in the field. Through Continuing Education, the program offers noncredit seminars, workshops, and conferences, both on and off campus, including distance learning.

Nursing

The College of Nursing at the University of Missouri-St. Louis offers a variety of programs for Registered Nurses. Currently, the college offers the RN/BSN-C Program at St. Charles Community College, at various sites in the Barnes-Jewish Health Care System, and at the SSM Health System at DePaul Health Center. The MSN/FNP Program is offered at St. Charles Community College and at Mineral Area College.

Optometry

The University of Missouri-St. Louis College of Optometry offers COPE approved advanced higher education programs that meet the requirements of state boards for individual relicensing. The dissemination of research data along with interactive panel programs of discussions of current issues are developed to advance clinical vision care.

Outreach Sites

The Division of Continuing Education offers selected graduate and undergraduate credit courses at UM-St. Louis Lindbergh, a satellite center located at Lindbergh High School in south St. Louis County. Continuing Education also offers credit courses leading to degree completion at other metropolitan sites, including St. Charles Community College, Mineral Area College, Jefferson College, and the South County Education and University Center.

In-house Training

Specialized research and technical assistance and in-house training programs are available to local businesses and organizations. With the help of expert faculty and staff consultants, Continuing Education is equipped to deliver specialized training on an in-house basis.

J.C. Penney Conference Center

This large conference facility at UM-St. Louis houses a 435-seat auditorium, as well as six large conference rooms, designed to provide an excellent academic environment and maximum convenience for course participants. A complete conference staff provides administrative support for seminars and conferences, as well as coordination for special hosted programs each year.



Degree Programs

Undergraduate Studies

Undergraduate degree programs are offered by the College of Arts and Sciences, College of Business Administration, College of Education, College of Fine Arts, College of Nursing and joint programs with Washington University.

Bachelor of Arts (B.A.)

Anthropology
Art history
Biology
Chemistry
Communication
Economics
English
French
History
Mathematics
Music
Philosophy
Physics
Political science
Psychology
Sociology
Spanish



Bachelor of Fine Arts (B.F.A.)

Bachelor of Interdisciplinary Studies (B.I.S.)

Bachelor of Music (B.M.)

Music
Music education

Bachelor of Science (B.S.)

Accounting
Applied mathematics
Biology
Biochemistry and Biotechnology
Chemistry
Civil engineering (joint program with Washington University)
Computer science
Criminology and criminal justice
Economics
Electrical engineering (joint program with Washington University)
Management information systems
Mathematics
Mechanical engineering (joint program with Washington University)
Nursing
Physics
Sociology

Bachelor of Science in Business Administration (B.S.B.A.)

Bachelor of Science in Education (B.S.Ed.)

Early childhood education
Elementary education
Physical education
Secondary education
Special education

Bachelor of Science in Nursing (B.S.N.)

Bachelor of Science in Public Administration (B.S.P.A.)

Bachelor of Social Work (B.S.W.)

Graduate Studies

The Graduate School administers all degrees and certificates beyond the bachelor's degree in all divisions except the College of Optometry, which administers the professional program leading to the Doctor of Optometry degree. In most cases, master's degree programs can be completed through part-time study.

Master of Accounting (M. Acc.)

Master of Arts (M.A.)

Communication
Criminology and criminal justice
Economics
English
History
Mathematics
Philosophy
Political science
Psychology
Sociology

Master of Fine Arts (M.F.A.)

Creative writing

Master of Music Education (M.M.E.)

Master of Business Administration (M.B.A.)


Master of Education (M.Ed.)

Adult and Higher Education
Counseling
Educational administration
Elementary education
Secondary education
Special education

Master of Public Policy Administration (M.P.P.A.)

Master of Science (M.S.)

Biology
Biochemistry and Biotechnology
Chemistry



Computer science
Gerontology
Management information systems
Physics
Physiological optics

Master of Science in Nursing (M.S.N.)

Master of Social Work (M.S.W.)

Education Specialist (Ed.S.)

Education Administration
School Psychology

Doctor of Education (Ed.D.)

Doctor of Optometry (O.D.)

Doctor of Philosophy (Ph.D.)

Applied mathematics
Biology
Business administration
Chemistry
Criminology and criminal justice
Education
Nursing
Physics
Physiological optics
Political science
Psychology

College of Arts and Sciences

General Information

The College offers a wide range of accredited baccalaureate, master's and doctoral degrees and multi-disciplinary certificates through 15 departments, the School of Social Work and the Institute for Women's and Gender Studies.

Anthropology (B.A.)
Biochemistry & Biotechnology (B.S., M.S.)
Biology (B.A., B.S., M.S., Ph.D.)
Chemistry and Biochemistry (B.A., B.S., M.S., Ph.D.)
Criminology and Criminal Justice (B.S., M.A., Ph.D.)
Economics (B.A., B.S., M.A.)
English (B.A., M.A., M.F.A.)
Foreign Languages and Literatures (B.A. in French and B.A. in Spanish)
History (B.A., M.A.)
Liberal Studies (B.L.S.)
Mathematics and Computer Science (B.A., B.S., M.A., M.S., Ph.D.)
Philosophy (B.A., M.A.)
Physics and Astronomy (B.A., B.S., M.A., Ph.D.)
Political Science (B.A., M.A., Ph.D.)
Public Policy and Administration (M.P.P.A.)
Psychology (B.A., M.A., Ph.D.)
Social Work (B.S.W., M.S.W.)
Sociology (B.A., B.S., M.A.)
Women's and Gender Studies (Certificate)

The College of Arts and Sciences consists of some 220 full-time faculty members in the following departments and school, each offering work in specific undergraduate degree programs: anthropology, biology, chemistry, criminology and criminal justice, economics, English, foreign languages and literatures, history, mathematics and computer science, philosophy, physics and astronomy, political science, psychology, social work, and sociology.

In addition the College offers a Bachelors Degree in Biochemistry and Biotechnology and a Bachelor of Science in Liberal Arts.

Graduate study degree programs, administered through the Graduate School, are also offered in the following departments of the College of Arts and Sciences: biochemistry and biotechnology, biology, chemistry, criminology and criminal justice, economics, English, history, mathematics and computer science, physics and astronomy, philosophy, political science, psychology, social work, and sociology. An interdisciplinary master's degree in public policy administration is offered in cooperation with the College of Business Administration. Specific degree requirements for both undergraduate and graduate degree programs are described in the departmental sections which follow this general information on the college. The College

also offers a Master of Science in Biochemistry and Biotechnology.

Coursework in the evening or through on-line and/or video instruction is made available by all departments of the College and the School of Social Work. The following degree programs can be completed in the evening:

Bachelor of Arts in Biology, Chemistry, Economics, English, History, Mathematics, Physics, Political Science, Psychology, and Sociology.

Bachelor of Science in Biology, Chemistry, Computer Science, Criminology and Criminal Justice, Economics Mathematics, Physics, and Sociology.

Bachelor of Social Work

Bachelor of Liberal Studies

Consult the website of the department in which you plan to major for details on degree requirements and a three year schedule of planned course offerings.

Requirements for Undergraduate Study

In addition to the university's general education requirements, all majors in the College of Arts and Sciences must meet the following requirements:

To graduate, all majors including the Bachelor of Liberal Studies must complete the following:

- Requirements of their chosen baccalaureate degree (i.e., B.A., B.S., BSW., etc.) in accordance with the policies of the College of Arts and Sciences, explained below.
- Requirements of the department for their selected major or interdisciplinary program.

Academic Policies

Grade Requirements

To graduate, all majors in the college must satisfy **one** of the following **grade point options**:

- Earn 120 graded hours with a C grade or better, which constitutes a complete degree program neither a grade of C- nor a satisfactory grade may be counted.
- Have a minimum UM-St. Louis campus grade point average of 2.0 and have met all other grade point restrictions for the degree or program.

Cultural Diversity Requirement

To expand cultural awareness, all students are required to complete a course that emphasizes Asian, African, Middle Eastern, Latin American, Pacific aboriginal, Native American, or a comparable culture. A list of courses which satisfy this requirement can be found in the introductory section of this Bulletin.

Residency Requirements

Unless otherwise specified, a transfer student must complete 12 hours of graded work at UM-St. Louis at the 2000 level or above within the minimum number of hours required for each major.

Unless otherwise specified, a transfer student must complete at least six hours of graded work at UM-St. Louis at the 2000 level or above within the minimum number of hours required for each minor. Students should consult the minor department for specific residency and grade requirements.

Specific Baccalaureate Degree Requirements**Course Requirements**

After fulfilling the general education and specific major degree requirements, students are to take the remaining hours required to complete the bachelor's degree from courses (which the appropriate department has evaluated as being of university-level quality) from one or more of the following areas or their university-quality equivalents at other institutions: anthropology/archaeology, art (appreciation, history, studio), astronomy, biology, chemistry, communication, criminology and criminal justice, economics, English, foreign languages/literatures, geology, history, mathematics/computer science, media studies, music (appreciation, history, performance), philosophy, physics, political science, psychology, social work, sociology, theatre and dance, business, education, engineering, or interdisciplinary. Other areas or courses not listed require approval by the chair of the student's department.

Bachelor of Arts (B.A.)

All B.A. degree candidates must successfully complete a curriculum which includes a departmental major or an approved interdisciplinary field. A major must include at least 30 credit hours but no more than 45 hours. The College offers the B.A. degree in anthropology, biology, chemistry, economics, English, French, history, mathematics, philosophy, physics, political science, psychology, sociology, and Spanish.

Foreign Language Requirement

Candidates for the B.A. degree are required to complete 13 credit hours or the equivalent in proficiency in one foreign language. Foreign language guidelines are as follows:

- 1) Students entering with no high school language units must enroll in Language 1 or may enroll in the 2115 series (see section 4).
- 2) Students with the degree of proficiency equivalent to 13 hours of college-level work may obtain exemption by passing the department's placement exam. The specific dates for the exam are announced in the *Schedule of Courses* or may be obtained from the admissions office or the Department of Foreign Languages and Literatures.
- 3) Native speakers of language other than English may meet the foreign language requirement by presenting a transcript from a university or secondary school of their native country.

The department will certify native speakers of those languages which are taught at the university. Those who are proficient in other languages must submit certification of competence to the college.

4) Language 2115 A, B, C (Intensive) will satisfy the foreign language requirement.

5) Students may not repeat, for either credit or quality points, an elementary course if they have already completed a higher-level course for which the elementary course, or its equivalent, is a prerequisite.

Applied Music and Studio Art

Students not majoring in music may count no more than eight hours in music performing organizations (Music 1400, 1410, 1500, 1520, etc). Students in the college not majoring in studio art may count any studio art course towards a degree in the college. This also includes transfer credit.

Bachelor of Science (B.S.)

The College offers the B.S. degree in mathematics, biochemistry and biotechnology, biology, chemistry, biochemistry, computer science, criminology and criminal justice, economics, physics (with emphasis in applied physics, astrophysics, engineering physics, or medical physics), and sociology. The requirements are generally the same as for the B.A. degree with the following exceptions:

- 1) More credit hours in the major discipline may be counted toward satisfying the 120 hours needed for graduation. See departmental degree requirements for information.
- 2) Not all departments require foreign language proficiency. See departmental degree requirements for information.

Bachelor of Liberal Studies

(See Interdisciplinary Programs for complete description)

Bachelor of Science in Public Policy and Administration (B.S.P.A.)

The B.S.P.A. degree program is administered through the Political Science Department and offers two emphasis areas. Public Administration emphasizes management in the public and nonprofit sectors. Public Policy allows focus on a particular policy area with attention to analytic training and research skills.

Bachelor of Social Work (B.S.W.)

The School of Social Work offers the B.S.W. degree, stressing the scientific and applied aspects of social work.

Minors

A number of minors are available at UM-St. Louis. Some are offered by individual departments, while others, such as Classical Studies is interdisciplinary in nature and involves a number of departments. The requirements for the various minors are listed in either the departmental or interdisciplinary sections of this *Bulletin*.

Special Programs

Certificate Programs

Graduate and undergraduate certificate programs are offered in biochemistry, biotechnology, forensic economics, gerontology, studies in religions, trauma studies, tropical and conservation biology, nonprofit organization management and leadership, women's and gender studies, and writing.

International Studies Certificate

In cooperation with the Center for International Studies and other Colleges, the College offers certificate programs in Africana, East Asian, European, Greek, International, and Latin American studies. The College also cooperates in offering the International Business Certificate.

Departmental Honors

Majors in the following departments may pursue departmental honors: biology, chemistry, economics, English, foreign languages and literatures, history, and political science.

Cooperative Education and Internship Programs

Cooperative education and internship programs are available for students seeking career-related employment while enrolled in school. These programs afford Arts and Sciences students an opportunity to gain practical experience and earn a substantial income. Co-ops and internships are administered through Career Services, 278 Millennium Student Center.

College of Arts and Sciences Extension

Credit courses are offered at off-campus locations through the continuing education branch of the College of Arts and Sciences. These courses are open to UM-St. Louis students and qualify for regular academic credit toward degrees in the college. In addition, noncredit courses are offered in a range of disciplines within the college.

Department of Anthropology

Faculty

Susan E. Brownell, Associate Professor*, Chairperson
Ph.D., University of California-Santa Barbara
Michael Cosmopoulos, Hellenic Government-Karakas
Foundation Professor of Greek Studies and Professor
Ph.D., Washington University
Sheilah Clarke-Ekong, Associate Professor*,
Ph.D., University of California-Los Angeles
Margo-Lea Hurwicz, Associate Professor*
Ph.D., University of California-Los Angeles
Jay Rounds, Des Lee Professor of Museum Studies*
Ph.D., University of California-Los Angeles
Pamela Ashmore, Assistant Professor
Ph.D., Washington University
Jacquelyn Lewis-Harris, Assistant Professor of Education
and Director for the Center for Human Origin and Cultural
Diversity
Ph.D., Washington University
Michael Ohnersorgen, Assistant Professor
Ph.D., Arizona State University
Allon Uhlmann, Assistant Professor
Ph.D., Australian National University
Patti Wright, Assistant Professor*
Ph.D., Washington University
Donna Hart, Adjunct Associate Professor
Ph.D. Washington University
Catherine Koziol, Adjunct Assistant Professor
M.A., Washington University
John Wolford, Adjunct Assistant Professor*
Ph.D., Indiana University
Paul Schoomer, Senior Lecturer
B.A., Washington University
Jen Glaubius, Lecturer
M.A., University of Cincinnati
Robin Machiran, Lecturer
M.A., University of Missouri-St. Louis
Vicki Rapti, Lecturer
M.A., Washington University

*members of Graduate Faculty

General Information

The aim of anthropology is to understand the cultural diversity of humans. For 100 years we have studied the cultures of the world, teaching people how to see themselves more clearly through those who are different from themselves and how to work with the underlying humanity that unifies all cultural differences.

Anthropology is the study of humans through all time and space. The discipline considers our struggle to adapt to and survive in the natural and social environments and to improve our lot in the face of perpetual change. Anthropologists teach how cultures evolve and the role of individuals and groups in the invention and perpetuation of

cultural beliefs, behaviors, symbols, and systems.

Anthropologists have accumulated in-depth knowledge of hundreds of cultures and use this to understand better our own cultural beliefs, actions, and institutions, as well as those of people from other cultures. As the science of cultures, anthropology brings a powerful perspective to bear in understanding the emerging global order. Cross-cultural and evolutionary insights and knowledge help us envision how we can incorporate vast human diversity into a unified world order of peace, prosperity, justice, and opportunity.

Degrees and Areas of Concentration

A Bachelor of Arts in Anthropology is offered with a focus on applied and theoretical skills. The anthropology faculty are actively involved in cultural, archaeological, and biological anthropology research at home and abroad.

Cultural Anthropology

Faculty are involved in research in St. Louis, Los Angeles, Ghana, South Africa, China, Israel, Papua New Guinea, Australia, and Native American communities. They encompass studies in health care choices of elder citizens, museum studies, gender and sexuality, body culture and sports, culture diversity principles, educational anthropology and more. Opportunities abound for students to pursue diverse research experiences on a vast range of topics on human actions, beliefs and organization. Through its partnership with the College of Education, selected students are able to work with a team of anthropology and education faculty and students in the design and teaching of human origin and cultural diversity lessons for 3rd-12th grade school children and their teachers.

Archaeology

Faculty are involved in regional and global research of both New and Old World Cultures. Current projects include ethnobotany and experimental archaeology on seed carbonization, as well as excavations of an 800-year-old ceremonial site at Cahokia Mounds, Illinois; a 10th-15th century pre-Aztec society in Northwestern Mexico, and a Bronze Age administrative center near Iklaina, Greece. The department also has an archaeology lab and library with one of the largest extant collections of prehistoric and historical artifacts from eastern Missouri.

Biological Anthropology

Faculty are active in the study of the behavior, ecology, and evolution of primates and of educational issues in the study of paleoanthropology (fossil record of human origins). Students have conducted original research at the St. Louis Zoo. They can study Forensic Anthropology and work with the department's own collection of 19th century skeletal remains.

Student Experience

Students may work closely with faculty in designing their personal course of study and carrying out their own research projects in any of the above fields of study. Research results

written by students have been presented at professional meetings, published, and presented to government and community agencies for use in planning and development. Students are encouraged to participate in the department's network of internships, providing an opportunity to practice newly acquired skills. As a capstone experience, all students, under faculty supervision, complete a significant independent research project for the Senior Seminar, culminating in written and oral reports to student colleagues and the faculty. The department encourages study abroad and in other regions of the United States and has scholarship funds to assist. There is an active Association of Student Anthropologists that sponsors an intercultural film series, speakers, and social activities.

Paid undergraduate positions are available on a competitive basis to anthropology majors as 1) department teaching assistants, 2) faculty research assistants, 3) and human origin and cultural diversity lab teachers/facilitators working with school groups grades 3-12, and adults.

Minors in Anthropology

The department offers two minors in cultural anthropology and archaeology. The minors are designed to offer students a flexible introduction to the fundamentals of the discipline to complement their major field of study. A minor is advisable for anyone planning a career with intercultural or international dimensions, where knowledge of cultural systems, environments, values, and symbols is useful.

Certificate in Archaeology

The certificate in archaeology provides applied training in both laboratory and field methods to students who could be hired to assist professional archaeologists in area firms. Internships can be arranged with the UM-St. Louis archaeology lab or with a local institution (e.g. Cahokia Mounds State Historic Site, Missouri Historical Society, Mastodon State Historic Site). These internships can be conducted on Saturdays, Sundays or in the evenings.

Undergraduate Studies

General Education Requirements

Majors must satisfy the university and college general education requirements. Any foreign language may be used to meet the language requirement for the B.A. degree.

Degree Requirements

Bachelor of Arts in Anthropology

Six hours of credit will be accepted for courses taken on a satisfactory/unsatisfactory basis from any departmental elective. The statistics requirement may be taken on an S/U basis. All other required courses for the major must be completed with a grade of C- or better. The following courses are required:

Anth 1005, Introduction to Biological Anthropology
Anth 1011, Introduction to Cultural Anthropology

Anth 1019, Introduction to Archaeology
Anth 3202, Culture, Politics, and Social Organization
Soc 3220, Sociological Statistics, or any other college level statistics course
Anth 4301, Ideas and Explanations in Anthropology
Anth 4308, Practicum in Cultural Research Methods **or**
Anth 4310, Laboratory Methods in Archaeology
Anth 4315, Senior Seminar
Anth 4316, Senior Seminar Tutorial

Two courses from two *different* subfields in Anthropology (Cultural Anthropology, Archaeology, Physical Anthropology, or Linguistic Anthropology) numbered 2100-2199

Two courses in Anthropology numbered 3200-3299, in addition to 3202.

The total number of hours required for the major is 39. Students may elect to take up to, but not to exceed, 12 additional hours in anthropology courses of their choice.

Residency Requirement

Undergraduate majors must complete a minimum of 17 hours of upper-level (3000-5000) Anthropology courses in residence, including 3202, 4301, 4308 or 4310, 4315, 4316, and one other course numbered from 3000 to 5000.

Archaeology Minor

Anth 1019, Introduction to Archaeology
One anthropology course at the 2100-2199 level with an archaeological emphasis.
One anthropology course at the 3200-3299 level with an archaeological emphasis.
One elective anthropology course at any level-archaeological emphasis is not required.
Anth 4310, Laboratory Methods in Archaeology **or**
Anth 4309, Archaeological Field School

Cultural Anthropology Minor

Anth 1011, Introduction to Cultural Anthropology
One anthropology course at the 2100-2199 level with a cultural emphasis.
One anthropology course at the 3200-3299 level with a cultural emphasis.
One elective anthropology course at any level-cultural emphasis is not required.
Anth 4301, Ideas and Explanations in Anthropology **or**
Anth 4308, Practicum in Cultural Research Methods
Grades of C- or better should be attained in all courses used to satisfy these requirements. One elective course taken on satisfactory/unsatisfactory basis may be applied toward the minor.

Archaeology Certificate

Anth 1019, Introduction to Archaeology
One anthropology course at the 2100-2199 level with an archaeological emphasis.
One anthropology course at the 3200-3299 level with an archaeological emphasis.
Anth 4310, Laboratory Methods in Archaeology

Anth 4309, Archaeological Field School
Anth 4326, Internship in Archaeology (1-6 credit hours)

Career Outlook

The B.A. in Anthropology equips the student for employment in almost any area in which a bachelor's degree is sufficient and sensitivity to cultural values and diversity is important. Graduates have found employment as university professors and lawyers and in archaeology research programs, urban development, planning programs, health care delivery, human services, many areas of business, government service, teaching, computer systems design, university administration, and many other areas.

Anthropology is excellent preparation for graduate and professional training in administration, the helping professions, development work, law, environmental studies, international and human resource areas of business, and in many other areas, depending upon individual interests. Many UM-St. Louis anthropology graduates have gone on to advanced training in master's, doctoral, and professional programs in respected universities around the country. For more career information, contact the department at 516-6020 for an appointment to talk with an appropriate faculty member or to request an information packet.

Course Descriptions

Students who have earned 24 or more semester hours of credit at any accredited post-secondary institution before the start of the fall 2002 semester must meet the general education requirements stipulated in the UM-St Louis 2001-2002 Bulletin. The following courses fulfill the Social Sciences breadth of study requirements as described in that Bulletin: 1005, 1011, 1015, 1019, 1021, 1025, 1033, 1041, 1091, 2109, 2110, 2111, 2113, 2114, 2117, 2120, 2124, 2125, 2126, 2131, 2132, 2134, 2135, 2136, 2137, 2138, 2173, 2190, 2191, 3202, 3210, 3212, 3215, 3225, 3230, 3231, 3234, 3235, 3238, 3242, 3244, 3250, 3255, 3286, 3290, 3291, 4301, 4308, 4309, 4310, 4315, 4350, 4391. The following courses satisfy the Cultural Diversity requirement: 1011, 1019, 1021, 1025, 1033, 1041, 1051, 1091, 2110, 2111, 2113, 2114, 2120, 2123, 2124, 2131, 2132, 2134, 2135, 2136, 2137, 2138, 2173, 2191, 3235, 3238.

1005 Introduction to Biological Anthropology (4)

Biological anthropology studies evolutionary theory and its development, the evolution/creationist debate, Mendelian and population genetics, the evolutionary place of humans within the animal kingdom, anatomical and behavioral characteristics of primates, fossilization, primate evolution, the human evolutionary fossil record, biological variability in modern humans, race as a biological concept, and applied biological anthropology. In addition to 3 hours of lecture, 1 hour per week is spent in lab classifying ancient human fossils, observing monkeys and apes at the zoo, and doing other projects.

1006 Introduction to Non-Human Primates (3)

As a general survey of our closest living relatives, this course introduces the ecology, cognition, communication, social and sexual behavior, and fossil history, of non-human primates. The work of well-known primatologists is used to illustrate various aspects of field research. Conservation status of primates in the wild is assessed as well as current threats to survival.

1011 Introduction to Cultural Anthropology (3) [V, SS, CD]

Cultural anthropology is the study of human beings as creatures and creators of society. This course is an introduction to that study which aims to demonstrate how the basic concepts and techniques developed by cultural anthropologists help us to understand societies of various degrees of complexity, including our own. We will consider topics such as language, kinship, gender, ethnicity, economics, politics, religion, and social change in a broad comparative framework. Major goals are an increased awareness of the social and cultural dimensions of human experience; the diversity and flexibility of human cultures; and processes of intercultural communication and conflict.

1015 Introduction to Folklore (3)

Introduces the basic concepts of folklore. Examines the connections between folklore as a discipline and anthropology as a discipline. Examines specific folk cultures both in Western societies and in non-Western societies. Emphasizes the view of folk culture as a dynamic part of modern as well as historical societies, with a constant focus on the human element that comprises the very heart and soul of culture.

1019 Introduction to Archaeology (3) [MI, SS, CD]

Archaeology is a subfield of anthropology that studies past human societies from their material remains. Explores the development of archaeology as a scientific discipline. Archaeological methods and theories will be explained using case studies from the continents of Africa, Asia, Australia, Europe and the Americas.

1021 The Body in Culture (3) [CD]

This course will compare uses of the body as a social signifier in Western and non-Western cultures. It will explore how culture shapes the images, uses, and meanings of the human body. It concentrates on different historical and cultural beliefs in five areas: how the body works; sex and gender; eating manners and food; pain and punishment; beauty and bodily mutilation.

1025 World Cultures (3) [V, SS, CD]

An ethnographic survey of the major culture areas of the world (Africa, Asia, North and South America, Europe, and Oceania).

1033 World Archaeology (3) [MI, SS, CD]

Discusses some of the greatest discoveries in archaeology from prehistoric cultures to ancient civilizations of Africa,

Asia, Australia, Europe, and the Americas. Archaeological examples may include early human origins at Olduvai Gorge in Tanzania, the pyramids of ancient Egypt, the Maya and Aztec of Mexico, the rise of civilization in Mesopotamia, England's Stonehenge, the Roman city of Pompeii, upper Paleolithic cave paintings in France and Spain, and American Indian pueblos of the Southwest. This introductory course is designed for non-anthropology majors, or for those who are considering the major.

1041 Sex and Gender Across Cultures (3) [CD]

This course considers womanhood, manhood, third genders, and sexuality in a broad cross-cultural perspective. The focus of the course is on the diverse cultural logics that separate females, males and sometimes third genders into different groups in different societies, with the male group usually being the more prestigious one. Focusing on indigenous non-Western cultures, this course examines gender roles and sexuality within the broader cultural contexts of ritual and symbolism, family, marriage and kinship, economy, politics, and public life. This course will help students understand what it is like to be male or female in non-Western cultures.

1051 Anthropology of Sport (3) [CD]

This course is an overview of sports in different times and cultures. It offers a comparative perspective on similarities and differences between sports in Western and non-Western cultural traditions through an examination of such topics as: the ancient Greek Olympic Games vs. sports in ancient China and Japan; the use of sports by colonial empires to colonize non-Western subjects; the development and spread of the modern Olympic Games; sports and nationalism; sports in China. Particular attention will be paid to the relationships between sport and gender, social class, ethnic/racial identity, and nationalism.

1091 Introductory Topics in Anthropology (3) [CD]

This course features special and current topics at the introductory level in the areas of social, cultural and physical anthropology and archaeology. The course examines the basic concepts and provides an understanding of the development of new trends and areas of study in the field of Anthropology. Topics will focus on the comparative study of non-Western cultures such as ecological practices in tribal societies; religious practices in prehistoric cultures; the roles of women across cultures; etc. Topics may vary and the course may be repeated provided topic is different.

1095 Brief Overview of the Four Fields of Anthropology (1)

Through the use of videos, readings, and the online course management system, this course provides a brief overview of the four traditional fields of anthropology: biological, archaeological, cultural, and linguistic anthropology. This course is designed for video instruction and offers minimal direct interaction with the instructor.

2105 Human Variation (3)

This course will look at the variation that exists within our own species, both between and within populations. It will investigate the evolutionary and genetic basis of human variation, as well as its diversity, adaptive significance, and distribution. Topics covered will include: body shape and physiology, blood groups, susceptibility to disease, and skin color. It will survey historical attempts to classify humans into different "races"; assess definitions of race as a solely cultural construct; and critique attempts to link race, intelligence and performance.

2109 Archaeological Field School (3-6)

Prerequisite: Consent of instructor. Introduction to field methods in archaeology and to the techniques of recording, storing, analyzing, and reporting archaeological findings. Experience is gained through participation in a field research project including excavation and survey projects. Emphasis is placed upon research design and implementation and upon the use of archaeological data in describing and explaining human behavior.

2110 Cultures of Asia (3) [CD]

A survey of the cultures of Asia including the prehistory of the area, the ethnographic and linguistic groupings, and the social organization and cultural systems of these groups.

2111 Cultures of East Asia (3) [CD]

An ethnographic and historical survey of the various people of East Asia including Japan, China, North and South Korea, Hong Kong, and Macau. Includes an examination of the varying cultural and social developments within and through the historical, geographical, and cultural environments.

2113 Cultures of South Asia (3) [CD]

An ethnographic and historical survey of the various people of South Asia including India, Pakistan, Afghanistan, Bangladesh, Sri Lanka, Tibet, and Nepal. Includes an examination of the varying cultural and social developments within and through the historical, geographical, and cultural environments.

2114 Cultures of the Near and Middle East (3) [CD]

A study of the cultural diversity and unity of the peoples of the Near and Middle East. Emphasis on historical and ethnological relationships, social and political structure, religious beliefs, and contemporary problems.

2117 Greek History and Culture (3)

(Same as Hist 2117) Greek civilization has had a deep impact on contemporary society in art, social, political, and economic organization; philosophy; law; medicine; and science. This course covers major aspects of Greek history and culture from antiquity to the present. It considers the major political and military events of Greek history, as well as important aspects of Greek culture, including sports and the history of the Olympic Games, literature, philosophy, and mythology.

2120 Native Peoples of North America (3) [CD]

A survey of the aboriginal cultures of Native Peoples of North America, including prehistory of the area, the ethnographic and linguistic groupings, and the social organization and cultural systems of North American groups.

2123 Cultures of Oceania (3) [CD]

An introduction to the original cultures and peoples of the South and Western Pacific: New Guinea, Australia, New Zealand, Samoa, Hawaii, Easter Island, etc. Focus is on art, religion, language, relationships to the environment, economics, politics, social groupings, and how these intertwine to form distinctly adaptive cultures in one of the least understood regions of the world.

2124 Cultures of Africa (3) [CD]

A basic ethnographic survey of African cultures, with attention to social groupings, ethnicity, religion, language and social change, and the ecological relationship between humans and nature.

2125 Introduction to Historical Archaeology (3)

An introductory course in the archaeology of historic period sites. The historic period refers to that portion of human history that begins with the appearance of written documents and continues to contemporary societies. This course will discuss the development, research strategies and future goals of historical archaeology. Archaeological examples will come from all populated continents, but will concentrate on the Americas including the Colonial towns of Jamestown and Williamsburg, Deep South plantations, Civil War battlefields, and shipwreck sites like the Titanic.

2126 Archaeology of Greater St. Louis (3)

Discussion of Ice Age hunters and gatherers, moundbuilders, fur traders, farmers and industrial workers from the history of the Greater St. Louis Community. The physical testimony to their lives remains buried beneath the city streets and buildings. Archaeology is our link to this cultural legacy. Through the use of archaeological data and historical sources, this class will explore human social and cultural developments in St. Louis.

2131 Archaeology of Missouri (3) [CD]

An introduction to the prehistoric American Indian cultures of Missouri and adjacent areas from 20,000 years ago to the coming of Europeans. Examines the development of prehistoric cultures in Missouri from small bands of hunters and gatherers to moundbuilding, agricultural societies and discusses the decline of indigenous cultures as they came into contact with European civilization.

2132 Archaeology of North America (3) [CD]

Examines the archaeological record of human developments throughout prehistoric North America. Topics of discussion include the origins of human culture in America, the processes of prehistoric cultural development in the different regions of the continent, and archaeological approaches to

explaining the behavior of North America's prehistoric inhabitants.

2134 Archaeology of the Inca, Aztec, and Maya (3) [CD]

Provides an overview of human social and cultural developments in Mesoamerica and Andean South America, from the first settlements over 20,000 years ago to the Spanish Conquest. Focuses on events leading to and including the establishment of Classic Mayan and Aztec societies, and discusses changes that led to what was perhaps the largest nation on earth for its time, the Inca.

2135 Old World Archaeology (3) [CD]

Examines the long and rich archaeological record of the Old World (Africa, Europe, Asia, Australia, and Oceania). Various topics and cultures of the Old World will be discussed from the earliest human ancestors to the rise and fall of complex societies.

2136 Archaeology of East Asia (3) [CD]

Discusses the development of cultures of China, Japan and Korea from the most ancient origin of humans in the region to the rise of early Chinese Dynastic states. Discoveries from archaeological excavations will be explored emphasizing China.

2137 Archaeology of Africa (3) [CD]

Examines the archaeology of Africa from pre-historic times up to the period of European contact (ca. A. D. 1700). Explores the diversity of the past African environments and cultures. It will deal with important archaeological issues such as the history and practice of African archaeology, the role of the environment in the development of technology, art, architecture, trade relations and statehood in Africa.

2138 African-American Archaeology (3) [CD]

This course examines people of African descent in the New World through archaeology. Class lectures will outline the development, research strategies and goals of African-American archaeology using examples from the colonial slave trade to the 20th Century. Specific topics include foodways, architecture, spirituality, health, ethnicity, acculturation/creolization, status, racism and gender.

2173 Archaeology and Cultures of the Biblical World (3) [CD]

A survey of the cultures of the Old Testament World with attention to their evolution, internal and external relationships, as well as their diverse religious, social, economic, and political institutions. The instructor will teach skills in evaluating popular vs. scientific and historical evidence of Biblical events.

2190 Special Topics in Archaeology (3)

Discusses varying cultural areas from an archaeological perspective. May be repeated with consent of department. Satisfies the Cultural Diversity requirement only when the topic is a Non-Western Culture.

2191 Special Topics in Non-Western Cultures (3) [CD]

This course focuses on a specific non-western culture, or geographically related groups of cultures. Ethnographic and/or archaeological cultures are chosen and their ecological, economic, social, religious, cosmological, political, ethnic, linguistic and other cultural domains are examined. Students are exposed to basic concepts and knowledge for understanding diverse cultures in their historical and/or contemporary contexts of development and relationship. Topics will vary.

2232 Analysis of Archaeological Artifacts (3)

Prerequisites: Anth 1109 or Anth 2109 or consent of instructor. This course teaches the methods and techniques for analyzing the artifacts from an archaeological dig. Students learn to process, analyze, and interpret ceramics, stone tools, plant and animal debris according to form, design, use wear, and associations. This analysis will form the basis of interpretations about human behaviors and cultural and temporal affiliations. The student will prepare a report of the examined collection.

3202 Culture, Politics and Social Organization (3)

Prerequisite: Anth 1011 or introductory course in another social science, or consent of instructor. A survey of political organizations and processes with emphasis on native and non-Western cultures. Included are topics such as strategies for obtaining and maintaining power, ethnicity, nationality, and the relationship of ideology to politics.

3209 Forensic Anthropology (3)

Prerequisites: Anth 1005, or Biol 1102, or junior standing, or consent of instructor. Same as CCG 3209. Students learn basic dental and skeletal anatomy and the methods used by biological anthropologist and archaeologists to collect and analyze human skeletal remains, including how to determine age and sex of skeletal remains, identify ethnic markers, determine stature and handedness, and identify the presence of trauma and/or pathology. Also covers the role of the forensic anthropologist in crime scene investigations and human rights issues. In the weekly lab section students will have an opportunity for hands-on application of techniques to analyze skeletal remains.

3210 Applied Anthropology (3)

Prerequisite: Anth 1011, or introductory course in another social science, or consent of instructor. A description and analysis of methods, principles, and use of anthropology in solution of problems associated with the changing conditions of our times. The course will examine a wide variety of cross-cultural case studies.

3212 Medical Anthropology (3)

Prerequisite: Anth 1011, or. An examination of the growing interaction between introductory course in another social science, or consent of instructor anthropology and medicine, and the increasing use of anthropologists in medical and health-care settings. In addition to teaching current theory in medical anthropology, the course focuses on

anthropologically based skills essential to those working in health-related fields.

3215 Growing Old in Other Cultures (3)

Same as Ger 3215. This course examines the wide-ranging variability in the roles of older people across different cultures and the effects these have on older people, their families, and their societies.

3225 Ritual, Death, and Sports: The Archaeology of Greek Mythology (3)

Prerequisites: Anth 1019 or Anth 1011 or consent of instructor. Since the beginning of our existence, humans have pondered the Mysteries of life and death and have strived to find meaning in a constantly changing world. In Western civilization, Greek mythology and religion represent humanity's earliest attempts to deal with the greater forces that affect our lives, which found expression in the great religious and athletic festivals, such as the Olympic Games. We will study the myths, rituals, religious beliefs of the ancient Greeks and how these were expressed in sports and art, in order to get a glimpse of the Greeks' understanding of life, death, and the supernatural. The sources of our exploration are two: the fascinating archaeological discoveries of ancient Greek sites and relevant readings from the ancient Greek literature.

3230 Method and Theory in Prehistoric Archaeology (3)

Prerequisites: Anth 1019 or consent of instructor. An advanced course emphasizing the various theories and methods employed in prehistoric archaeological research. Archaeological theories and methods will cover diffusion, cultural ecology, seasonality, plant and animal domestication, subsistence, settlement patterns, spatial analysis, ethnoarchaeology, artifact analysis, seriation, dating techniques, remote sensing, and others. Requires substantial reading and writing.

3231 Method and Theory in Historical Archaeology (3)

Prerequisites: Anth 1019, 2125, or consent of instructor. An advanced class in archaeological method and theory concerning historical period sites. Requires substantial reading and writing and covers a broad range of theoretical and methodological approaches. Theoretical paradigms will include functionalism, middle range theory, evolutionary theory, and public archaeology. Methodological topics will include pattern analysis, architectural archaeology, urban archaeology, subsistence studies, and others.

3234 Cultural Continuity and Change in Sub-Saharan Africa (3)

Prerequisite: Anth 1011 or intro course in another social science or consent of instructor. This course is intended to examine cultural phenomena within Africa from the 19th century to the present. Our goal will be to reach an understanding of continuities and change in the existing universal social institutions. A thematic approach will include discussions on kinship, geo-politics, natural and supernatural forces, gender relations, economics in the world

economy, and prospects for the future. Ethnographic and other supporting social scientific resources gathered from African people will be investigated. Problems and accomplishments are both reviewed so as to acknowledge the complexity of contemporary African societies.

3235 Women in Sub-Saharan Africa: A Contemporary Perspective (3) [CD]

Prerequisite: Anth 1011, or introductory course in another social science, or consent of the instructor. Examines important traditional concerns of anthropologists such as the nature of kinship obligation and privilege; gender as a basis for the division of labor; social organization for formal and informal networks; and ritual and ceremony. In addition we look closely at the changing role of African women, as related by African women testing the very limits of what is "socially and culturally acceptable." The roles women continue to play in politics, comprehensive development (i.e., cultural and economic) and evolving social structures are reviewed to gain an understanding of the historical and contemporary mandates for their social action.

3238 Culture and Business in East Asia (3) [CD]

Prerequisite: Anth 1011, or introductory course in another social science, or consent of the instructor. This course looks at the influence of local history and culture on the course of economic development in Mainland China, Taiwan, Hong Kong, Japan and North and South Korea. This course will consider how East Asia has departed from the Western model of modernization and will look at the clash of cultures as Western corporations try to do business in East Asia. The course will analyze the role of family, kinship, and social hierarchy in shaping East Asian business practices. The largest part of the course will be devoted to Mainland China.

3242 The Culture of Cities (3)

Prerequisite: Anth 1011, or introductory course in another social science, or consent of instructor. A comparative analysis of the cultural roles of urban centers and the processes of urbanization in non-Western and Western societies, past and present. A consideration of urban influences on rural America and the traditional peasant and primitive peoples of Africa, Asia, and Latin America.

3244 Religion, Magic, and Science (3)

Prerequisite: Anth 1011, or introductory course in another social science, or consent of the instructor. A consideration of the roles of religion, magic, and science in culture and social organization.

3250 American Folklore (3)

Prerequisite: Anth 1011, or introductory course in another social science, or consent of the instructor. Focuses on United States society from humanistic and cultural viewpoints. Operates under the basic definition of folklore as "artistic communication in small groups," and thus embraces the idea of folklore as an ongoing creative process combining the conservative elements of tradition with the dynamic aspects of cultural creation. Comparing United States

folklore with that from the borderlands of Canada and Latin America, the course will use fieldwork and concepts in folkloristics to focus on folklore genres (such as narratives, arts, crafts, architecture, oral history, and others) and folk groups (such as ethnic populations, age groups, gender groups, occupations, college students, and others).

3255 Oral History and Urban Culture in St. Louis (3)

Prerequisites: Anth 1011 or instructor's consent. This course involves students in background research and active fieldwork in urban anthropology within the metropolitan area. The focus will be on learning and applying oral history techniques in the city of St. Louis and its neighborhoods. Students will conduct in-depth fieldwork in one city neighborhood. They will learn fieldwork methodologies and how to conduct social, cultural, and historical research in preparation for fieldwork. This includes learning to research, conduct, and process interviews. They will also learn to work in teams to construct a group project to be presented to the class.

3286 Society, Arts, and Popular Culture (3)

Same as Soc 3286. Prerequisite: Soc 1010 or Anth 1011. The relationship of artists, writers, and musicians; their traditions and modes of artistic expression to variant social structures and institutions; and social pressures and rewards.

3290 Advanced Topics in Archaeology (3)

Prerequisites: Anth 1019, or consent of instructor. Selected topics in archaeology with a strong theoretical and methodological approach. Requires substantial reading and writing. May be repeated with consent of department.

3291 Current Issues in Anthropology (3)

Prerequisite: Anth 1011, or introductory course in another social science, or consent of instructor. Selected topics in social, cultural, and physical anthropology, with emphasis on current issues and trends in the field of anthropology. May be repeated provided topic is different.

3292 Current Issues in Anthropology (4)

Prerequisites: Anth 1011, or introductory course in another social science, or consent of instructor. Selected topics in social, cultural, and physical anthropology, with emphasis on current issues and trends in the field of anthropology. Includes a lab component. May be repeated provided topic is different.

4301 Ideas and Explanations in Anthropology (3)

Prerequisite: Anth 1011 or consent of instructor. Major developments in anthropological explanations of social and cultural behavior through intensive reading and discussion of source materials.

4308 Practicum in Cultural Research Methods (4)

Prerequisites: One course in statistics and Anth 1011, or consent of instructor. (With computer laboratory.) Emphasizes hands-on training in techniques for both the collection and analysis of ethnographic data, including

participant observation, selection of ethnographic informants, key informant interviewing, and more systematic methods such as survey research. The use of computer programs for the development of protocols to collect, analyze, and display data will be covered in lab.

4309 Archaeological Field School (3-6)

Prerequisite: Consent of instructor. Advanced methods in field archaeology and laboratory analysis. Emphasis is placed on sampling, the use of theory in guiding field and laboratory work, advanced field techniques, and specialty analysis. Opportunities are provided for the development of field and laboratory leadership skills. Independent research is encouraged.

4310 Laboratory Methods in Archaeology (4)

Prerequisite: Anth 1019, Soc 3220 or equivalent, or consent of instructor. An advanced laboratory analysis and curation methods class. The emphases are (1) mastery of general lab methods and procedures, and (2) development of independent analysis skills in one or more specialty areas such as lithics, ceramics, computer graphics, statistical methods, paleoethnobotany, experimental analysis, and soils.

4315 Senior Seminar in Anthropology (3)

Prerequisite: Anth 4308 or 4310. The capstone course for anthropology majors, ideally taken in the final semester of the senior year. Students write a research proposal, conduct an original research project, write it up as a senior thesis, and present the thesis before the department. Must be taken concurrently with Anth 4316.

4316 Senior Seminar Tutorial (1)

Prerequisites: Anth 4308 or 4310 and consent of Instructor. The student chooses a faculty member with expertise relevant to the topic of the senior thesis. The student and faculty member arrange a schedule of meetings to discuss the drafts of each section of the senior thesis as they are completed. The student will be expected to follow advice about research methods, find and utilize the sources suggested, and incorporate editorial corrections in the writing. The instructor will be the Second Reader of the senior thesis, and will jointly assign the final grade to the senior thesis together with the instructor of Anth 4315. Must be taken concurrently with Anth 4315.

4325 Internship in Cultural Anthropology (1-3)

Prerequisite: Recommendation of major adviser. Students will be assigned an internship on recommendation of their adviser. Internships will consist of a period of study, observation, and training in an appropriate public or private institution, business, or government office. Cultural Anthropology internships are aimed at providing students with opportunities to learn to apply their knowledge of social and cultural process and diversity to practical situations in the market place of ideas, goods, and services. Specific placements will be selected to match a student's interests and career goals.

4326 Internship in Archaeology (1-6)

Prerequisite: Recommendation of major adviser. Students will be assigned an internship on recommendation of their adviser. Internships will consist of a period of study, observation, and training in an appropriate public or private institution, business, or government office. Archaeology internships are aimed at providing students with opportunities to work with professional archaeologists in public and private research environments including laboratories and curation centers. Specific placements will be selected to match a student's interests and career goals.

4327 Internship in Folklore (1-3)

Prerequisite: Recommendation of major adviser. Students will be assigned an internship on recommendation of their adviser. Internships will consist of a period of study, observation, and training in an appropriate public or private institution. Folklore internships are aimed at providing students with opportunities to work with professional folklorists and anthropologists in an applied setting. Further, it allows a student to devote an entire semester to produce a viable urban fieldwork report. Specific placements will be selected to match a student's interests and career goals.

4328 Internship in Museum Studies (1-3)

Prerequisite: Recommendation of major adviser. Students will be assigned an internship on recommendation of their adviser. Internships will consist of a period of study, observation, and training in an appropriate museum or other exhibition oriented institution. Museum internships are aimed at providing students with opportunities to work with professional museologists to learn skills relating to areas such as exhibition, curation, public programming, research, and publication. Specific placements will be selected to match student's interests and career goals.

4329 Internship in Physical Anthropology (1-3)

Prerequisite: Recommendation of major adviser. Students will be assigned an internship on recommendation of their adviser. Internships will consist of a period of study, observation, and training in an appropriate institution, lab or research setting related to forensics, primate behavior and biology, human genetics, population, environmental policy, and other domains related to physical anthropology.

4350 Special Study (1-3)

Prerequisite: Consent of instructor. Independent study through readings, reports, or field research. No student may take more than a cumulative total of 6 hours of Special Study.

4391 Current Issues in Anthropology (1-4)

Prerequisite: Anth 1011 or consent of instructor. Selected topics in social, cultural, and physical anthropology, with emphasis on current issues and trends in the field of anthropology. May be repeated.

5428 Culture and Business in East Asia (3)

Prerequisite: Advanced Undergraduate or Graduate standing and one course on East Asia. This course looks at the influence of the local history and culture on economic development of Mainland China, Taiwan, Hong Kong, Japan and North and South Korea. This course will consider how East Asia has departed from the Western model of modernization and will look at the clash of cultures as Western corporations try to do business in East Asia. The course will analyze the role of family, kinship, and social hierarchy in shaping East Asian business practices. The largest part of the course will be devoted to Mainland China. This course is taught at Washington University for the Joint Center on East Asian Studies.

5429 The Body in East Asian Culture (3)

Prerequisites: Graduate standing and one course on East Asia. This course looks at the meanings and practices associated with the body in Mainland China, Japan, South Korea, Taiwan, and Hong Kong. Detailed analysis of the concepts of the body in classical Chinese medicine forms the basis for philosophical discussions of Western mind-body dualism vs. Eastern mind-body synthesis. Anthropological, sociological and historical research on sports, fashion, beauty, diet, meditation, and martial arts will also be covered. This course is taught at Washington University for the Joint Program on East Asian Studies.

5440 Cultural Aspects of Aging (3)

Prerequisite: Graduate status or consent of instructor Same as Ger 5440. Focuses on the variety of solutions encountered in different sociocultural contexts for dealing with the problems, challenges and opportunities of growing old. It is organized around topics that are of concern to both anthropology and social gerontology: the status of the aged, intergenerational relations, aging in modernizing societies, ethnic dimensions of aging in complex societies, health in later life, death and dying. Both in-depth case studies and cross-cultural comparisons are examined in an effort to arrive at a culturally informed assessment of factors affecting aging and the aged in the United States.

6135 Foundations of Museology I (3)

Prerequisite: Consent of Director of Museum Studies Program. Same as Art 6135 and Hist 6135. Concepts for understanding museums in their social and cultural context, history of museums, museology and general social theory, information transfer vs. meaning-making models, museums and communities, the changing role of museums, museums as complex organizations, process models of museology.

6136 Foundations of Museology II (3)

Prerequisite: Anth 6135 and consent of Director of Museum Studies Program. Same as Art 6136 and Hist 6136. Audience-centered approaches to museology; visitor research and learning theory, philosophical and practical considerations in museum planning, the physical design of museums, creativity, exhibit and program development,

collections and curation, the challenge of diversity, the future of museums.

6137 Effective Action in Museums (3)

Prerequisite: Consent of Director of Museum Studies Program. Same as Art 6037 and Hist 6137. The nature of the work done in museums; how museums are organized to accomplish this work, professional roles and practices, technology and resources used by museums, skills for creative and effective leadership in project management and administration in museums, planning, flow charting, budgeting, team dynamics, and related skills. The course will include several site visits to area museums and guest lectures by a variety of museum professionals.

6138 Museum Studies Master's Project (4)

Prerequisite: Consent of Director of Museum Studies Program. Same as Art 6038 and Hist 6138. Research and writing/exhibit development on a selected topic.

6139 Practicum in Exhibit and Program Development (3)

Prerequisite: Consent of Director of Museum Studies Program. Development of exhibits and related education programs. Students work as teams with museum professionals to develop and implement an exhibit concept that integrates design, education and marketing from the onset. Methods in planning, flow charting, budgeting, team dynamics and related skills.

Degree Programs in Biochemistry and Biotechnology

Faculty

Wesley R. Harris, Professor of Chemistry and Biochemistry*, Director
Ph.D., Texas A&M University

Teresa Thiel, Professor of Biology*; Associate Dean, Arts and Sciences
Ph.D., Case Western Reserve University

Xuemin Wang, E. Desmond Lee and Family Fund Endowed Professor of Plant Sciences*
Ph.D., University of Kentucky

Valerian T. D'Souza, Associate Professor of Chemistry and Biochemistry*
Ph.D., University of Detroit

Cynthia M. Dupureur, Associate Professor of Chemistry and Biochemistry*
Ph.D., Ohio State University

Jane A. Starling, Associate Professor of Biology Emerita*
Ph.D., The William Marsh Rice University

Keith J. Stine, Associate Professor of Chemistry and Biochemistry*
Ph.D., Massachusetts Institute of Technology

Colin MacDiarmid, Assistant Professor of Biology*
Ph.D., University of Auckland

Michael R. Nichols, Assistant Professor of Chemistry and Biochemistry*
Ph.D., Purdue University

Wendy M. Olivas, Assistant Professor of Biology*
Ph.D., University of Nebraska Medical Center

Lisa Schechter, Assistant Professor of Biology*
Ph.D., Harvard University

Marc Spingola, Assistant Professor of Biology*
Ph.D., University of New Mexico

Chung F. Wong, Assistant Professor of Chemistry and Biochemistry*
Ph.D., University of Chicago

Bethany Zolman, Assistant Professor of Biology*
Ph.D., The William March Rice University

*members of Graduate Faculty

General Information

Degrees

The Biochemistry and Biotechnology Program provides academic programs leading to the undergraduate B.S. degree or the graduate M.S. degree in Biochemistry and Biotechnology. These degrees are offered in cooperation with the Department of Biology and the Department of Chemistry and Biochemistry. Faculty members in this program are engaged in teaching and research in areas such as biochemistry, genetics, molecular biology, cell biology and developmental biology. Majors have the opportunity through coursework, laboratories, seminars and research experience to develop the knowledge and skills necessary to enter the workforce or to go on with further graduate education.

Career Outlook

Nationally and regionally the emerging Biotechnology sector will increase the demand for workers with significant training in molecular biology, biochemistry, and genetics. The St. Louis metropolitan area has long been a major center for biochemistry and biotechnology, and in the past decade it has become a focus for the establishment of life sciences research and development. A degree in Biochemistry and Biotechnology provides students with the training they need to become part of the broad biotechnology and life sciences industries.

Undergraduate Studies

Degree Requirements

Bachelor of Science in Biochemistry and Biotechnology

General Education Requirements

Students must satisfy the university and college general education requirements. Some math or science courses required for the major may be used to meet the science and mathematics requirement of the university. There is no foreign language requirement for the degree.

Satisfactory/Unsatisfactory Option

Up to 18 credit hours may be taken on a satisfactory/unsatisfactory (s/u). Excluded from this option are required courses in biology, chemistry, physics, and mathematics.

Non-major Biology or Chemistry courses

Courses in Biology with a number less than 1800 and courses in Chemistry with a number less than 1100 do not count toward the credit hours required for a major in biochemistry and biotechnology.

1) Biology and Chemistry Core Courses

Biol 1811, Introductory Biology: From Molecules to Organisms
Biol 2012, Genetics
Biol 2013, Genetics Laboratory
Biol 2482, Microbiology
Biol 2483, Microbiology Laboratory
Biol 3622, Cell Biology
Biol 4602, Molecular Biology
Chem 1111, Introductory Chemistry I
Chem 1121, Introductory Chemistry II
Chem 2223, Quantitative Analysis
Chem 2612, Organic Chemistry I
Chem 2622, Organic Chemistry II
Chem 2633, Organic Chemistry Laboratory
Chem 3302, Physical Chemistry for the Life Sciences

2) Biochemistry and Biotechnology Core Courses

Biol 4712 or Chem 4712, Biochemistry
Biol 4713, Techniques in Biochemistry or
Chem 4733, Biochemistry Laboratory

Biol 4614, Biotechnology Laboratory I**3) Math and Physics Core Courses****Math 1030**, College Algebra**Math 1035**, Trigonometry**Math 1100**, Basic Calculus or**Math 1800**, Analytic Geometry and Calculus I**Phys 1011**, Basic Physics**Phys 1012**, Basic Physics**4) Biochemistry and Biotechnology Elective Courses – 9 credit hours chosen from the courses below:****Biol 4612**, Molecular Genetics of Bacteria**Biol 4615**, Biotechnology Laboratory II**Biol 4622**, Molecular Cell Biology**Biol 4632**, Nucleic Acid Structure and Function**Chem 3643**, Advanced Organic Chemistry Laboratory**Chem 4722**, Advanced Biochemistry**Chem 4764**, Interdisciplinary Topics in Biochemistry**Chem 4772**, Physical Biochemistry**Electives**

Recommendations include basic statistics (Math 1310 or Math 1320), computer science, public speaking (Comm 1040), foreign language, ethics, and undergraduate research.

Research Opportunity

Students are encouraged to complete a minimum of 2 credit hours of undergraduate research, which provides students with an opportunity to gain research experience under the supervision of a faculty member. The project will normally include a review of the literature, laboratory experience and a research paper.

Minor in Biology

Students who complete the B.S. degree in Biochemistry and Biotechnology may also obtain a minor biology by completing **Biology 1821**, Introductory Biology : Organisms and the Environment. The minor must be approved by the chairperson of the Department of Biology. At least 9 hours of the biology course credits must be taken in residence at UM-St. Louis. Candidates must have a cumulative grade point average of 2.0 or better in the minor, and none of the courses may be taken on a satisfactory/unsatisfactory (s/u) basis.

Minor in Chemistry

Students who complete the B.S. degree in Biochemistry and Biotechnology will also fulfill the course requirements for a minor in Chemistry. A GPA of at least 2.0 is required for the courses presented for the minor. At least three courses toward the Chemistry minor must be completed at UM-St. Louis.

Graduate Studies**Degree Requirements****Master of Science in Biochemistry and Biotechnology**

The Biochemistry and Biotechnology Program offers two types of Master of Science degrees. One is a non-thesis option suitable for those with laboratory research experience or for others, such as educators, who do not require research experience. The other option includes a laboratory-based research apprenticeship leading to a written thesis. All students admitted to the graduate program are considered to be in the non-thesis program unless they have been accepted as a thesis student by a faculty member of the program.

M.S. Admission Requirements

Applicants to the M.S. program must submit completed application and personal data forms, three letters of recommendation from undergraduate faculty, and transcripts of all previous work. Submission of Graduate Record Examination scores, although not required, is highly recommended and will be used by the admission committee for consideration of admittance. Admission as a regular graduate student requires graduation from an accredited college with a minimum grade point average overall and in biology and chemistry courses of 3.0 (where A = 4.0). Students will generally be expected to have completed a major in biology, chemistry, biochemistry, or biotechnology. In addition to the Graduate School admission requirements, applicants should have completed an undergraduate course in biochemistry (equivalent to Biology/Chemistry 4712).

All foreign applicants, except those from countries where English is the primary language, must take the TOEFL. Ordinarily, a score of 213 on the computer-based exam (550 on the paper-based exam) or better is required.

Requirements

Both the thesis and non-thesis options require a total of 30 graduate credit hours, of which at least half must be at the 5000-level or above. A maximum of 12 or 5 credit hours of Graduate Research (Biol or Chem 6905) may be applied toward the 30 credit hour total for the thesis or non-thesis options, respectively.

1) Required Courses**Chem 4722**, Advanced Biochemistry**Chem 5794**, Special Topics in Biochemistry (Bioinformatics)**Biol 4614**, Biotechnology Laboratory I or**Biol 6615**, Advanced Biotechnology Laboratory II**Biol 6602**, Advanced Molecular Biology or**Biol 6612**, Advanced Molecular Genetics of Bacteria**Biol 6889**, Graduate Seminar**2) Elective Courses****Chem 4733**, Biochemistry Laboratory**Chem 4764**, Interdisciplinary Topics in Biochemistry

Chem 4772, Physical Biochemistry
Chem 5794, Special Topics in Biochemistry
Chem 6787, Problem Seminar in Biochemistry
Chem 6905, Graduate Research
Biol 4842, Immunobiology
Biol 5069, Topics in Cell and Molecular Biology
Biol 6602, Advanced Molecular Biology
Biol 6612, Advanced Molecular Genetics of Bacteria
Biol 6615, Advanced Biotechnology Laboratory II
Biol 6622, Advanced Molecular Cell Biology
Biol 6632, Advanced Nucleic Acid Structure and Function
Biol 6642, Advanced Plant Molecular Biology & Genetic Engineering
Biol 6652, Advanced Virology
Biol 6699, Graduate Internship in Biotechnology
Biol 6889, Graduate Seminar
Biol 6905, Graduate Research

Course Descriptions

Prerequisites may be waived by consent of the department or instructor. Some courses as indicated in the course description may be taken concurrently with the listed offering. Consult an adviser for further information.

Students who have earned 24 or more semester hours of credit at any accredited post-secondary institution(s) before the start of the fall 2002 semester must meet the general education requirements stipulated in the UM-St. Louis 2001-2002 Bulletin. The following courses fulfill the Natural Sciences and Mathematics breadth of study requirements as described in that Bulletin:

Biology: 1811, 2012, 2482, 3622, 4602, 4712, 4612, 4622, 4632. Chemistry: 1111, 1121, 2223, 2612, 2622, 3302, 4712, 4722, 4764, 4772.

Biology Courses

*Note – Majors in Biochemistry and Biotechnology are not required to take Biol 1821; hence it is not a prerequisite for Biol 2012, Biol 2482, or Biol 3622 for these majors.

1811 Introductory Biology: From Molecules to Organisms (5), [MI, MS]

Prerequisite: A minimum of high school chemistry, Eng 1100 or equivalent (may be taken concurrently), and placement into college algebra or higher. Required for students intending to major in biology or take specified biology courses at the 2000-level or above. This course presents an introduction to some of the principles of biology and scientific methodology applied to the molecular/cellular through organ system levels of organization. Topics include: cell structure, metabolism, reproduction, heredity and major physiological processes regulated by organ systems. Three hours of lecture, three and one-half hours of lab, and one hour of discussion per week.

2012 Genetics (3)

Prerequisite: Biol 1811 [biology majors must also take Biol 1821] and Chem 1111 or [Chem 1082 plus Chem 1091]. Fundamental principles of inheritance, including classical genetic theory as well as recent advances in the molecular basis of heredity. Three hours of lecture per week.

2013 Genetics Laboratory (2)

Prerequisite: Concurrent registration in Biol 2012, or by consent of instructor. Laboratory to accompany Biol 2012. Three and one-half hours of organized laboratory time per week. Students may need to return to the laboratory at unscheduled times to complete some exercises.

2482 Microbiology (3)

Prerequisite: Biol 1811 [biology majors must also take Biol 1821] and Chem 1111 [or Chem 1082 plus Chem 1091]. Study of microorganisms, their metabolism, genetics, and their interaction with other forms of life. Three hours of lecture per week.

2483 Microbiology Laboratory (2)

Prerequisite: Biol 2482 (may be taken concurrently). Experimental studies and procedures of microbiological techniques. Three and one-half hours of organized laboratory time per week. Students will need to return to the laboratory at unscheduled times to complete some exercises.

3622 Cell Biology (3)

Prerequisite: Biol 1811 [biology majors must also take Biol 1821], Chem 1111, 1121 and 2612 or equivalents. Examination of the basic biological processes of cells.

4602 Molecular Biology (3)

Prerequisite: Biol 2012 and 4712. A study of the principles of molecular biology, with emphasis on understanding the genetic regulation of DNA, RNA, and protein synthesis and function in the eukaryotic cells. Three hours of lecture per week. Students may not receive credit for both Biol 4602 and Biol 6602.

4612 Molecular Genetics of Bacteria (3)

Prerequisite: Biol 2482 and Biol 2012. A study of the molecular biology of gene replication, transfer, and expression in bacterial cells. Topics include DNA replication, transcription and translation, mutagenesis, DNA repair and recombination, gene transfer, and the regulation of genes and global expression systems. Three hours of lecture per week. Students may not received credit for both Biol 4612 and Biol 6612.

4614 Biotechnology Laboratory I (4)

Prerequisite: Biol 2012 or consent of instructor. An introduction to the fundamental concepts that underlie the field of biotechnology. Both the basic principles of molecular biology and hands-on experience with the techniques of the field will be addressed through lectures, discussion, and a series of laboratory exercises. Two hours

of lecture and four hours of laboratory per week. Fulfills a laboratory requirement only; may not be used to fulfill the 4000-level or above lecture course requirement for the B.A. or B.S. degree in biology. Students may not receive credit for Biol 4614 and a comparable biotechnology course from another institution.

4615 Biotechnology Laboratory II (4)

Prerequisite: Biol 4614 and either Biol 4602 or Biol 4612, or consent of instructor. An in-depth look at theory and practice of biotechnology. Lectures and discussion will examine the underlying principles, and laboratory exercises will present hands-on experience with current techniques. One hour of lecture and six hours of laboratory per week. Fulfills a laboratory requirement only; may not be used to fulfill the 4000-5000 level lecture course requirement for the B.A. or B.S. degree in biology. Students may not receive credit for both Biol 4615 and Biol 6615.

4622 Molecular Cell Biology (3)

Prerequisite: Biol 3622, Biol 4602, and Biol 4712 or consent of instructor. A study of the structural organization and processes of eukaryotic cells. Topics of discussion will include regulation of transcription, gene product processing and transport, organelle biogenesis and function, cytoskeletal structure and function, and cell interactions. Three hours of lecture per week. Students may not receive credit for both Biol 4622 and Biol 6622.

4632 Nucleic Acid Structure and Function (3)

Prerequisite: Biol 2012 and 4712 or equivalent or consent of instructor. Comprehensive view of structural properties of DNA and RNA that promote molecular interactions and biological function. Topics include physical properties of nucleic acids, formation and biological importance of higher order structures, RNA enzymatic activities, nucleic acid-protein interactions, and RNA metabolism. Three hours of lecture per week. Students may not receive credit for both Biol 4632 and 6632.

4712 Biochemistry (3)

[Same as Chem 4712]. Prerequisite: Chem 2612 and either Biol 1811 or Chem 2622. Examines the chemistry and function of cell constituents, and the interaction and conversions of intracellular substances. Students may not receive credit for both Biol 4712 and Chem 4712.

4713 Techniques in Biochemistry (2)

Prerequisite: Biol 4712 or Chem 4712 (may be taken concurrently). Laboratory activities introducing fundamental qualitative and quantitative biochemical techniques. Student evaluation will be based on laboratory participation, student laboratory reports, and written examinations. Three and one-half hours of organized laboratory time per week. Students may need to return to the laboratory at unscheduled times to complete some experiments.

4842 Immunobiology (3)

Prerequisite: Biol 4712 and Chem 2612. The fundamental principles and concepts of immunobiology and immunochemistry. Emphasis on the relation of immunological phenomena to biological phenomena and biological problems. Three hours of lecture per week.

5069 Topics in Cellular and Molecular Biology (1)

Prerequisite: Graduate standing. Presentation and discussion of student and faculty research projects and/or current research articles in molecular, cellular and developmental biology. May be repeated.

6602 Advanced Molecular Biology (3)

Prerequisite: Biol 2012 and 4712, or consent of instructor. A study of the principles of molecular biology, with emphasis on understanding the genetic regulation of DNA, RNA, and protein synthesis and function in eukaryotic cell. Three hours of lecture per week. Students will be required to give an oral presentation and/or write an extra paper on a topic relevant to the course. Students may not receive credit for both Biol 6602 and Biol 4602.

6612 Advanced Molecular Genetics of Bacteria (3)

Prerequisite: Biol 2012 and 2482. A study of the molecular biology of gene replication, transfer, and expression in bacterial cells. Topics include DNA replication, transcription and translation, mutagenesis, DNA repair and recombination, gene transfer, and the regulation of genes and global expression systems. Three hours of lecture per week. Students will be required to give an oral presentation and/or write an extra paper on a topic relevant to the course. Student may not receive credit for both Biol 6612 and Biol 4612.

6615 Advanced Biotechnology Laboratory II (4)

Prerequisite: Biol 4614 and either Biol 4602 or Biol 4612, or consent of instructor. An in-depth look at the theory and practice of biotechnology. Lectures and discussion will examine the underlying principles, and laboratory exercises will present hands-on experience with current techniques. One hour of lecture and six hours of laboratory per week. Students will be required to give an oral presentation and/or write an extra paper on a topic relevant to the course. Students may not receive credit for both Biol 6615 and Biol 4615.

6622 Advanced Molecular Cell Biology (3)

Prerequisite: Biol 4602, Biol 3622, and Biol 4712, or consent of instructor. A study of structural organization and processes of eukaryotic cells. Topics of discussion will include regulation of transcription, gene product processing and transport, organelle biogenesis and function, cytoskeletal structure and function, and cell interactions. Three hours of lecture per week. Students will be required to give an oral presentation and/or write an extra paper on a topic relevant to the course. Students may not receive credit for both Biol 6622 and Biol 4622.

6632 Advanced Nucleic Acid Structure and Function (3)

Prerequisite: Biol 2012 and 4712 or equivalent or consent of instructor. Comprehensive view of structural properties of DNA and RNA that promote molecular interactions and biological function. Topics include physical properties of nucleic acids, formation and biological importance of higher order structures, RNA enzymatic activities, nucleic acid-protein interaction, and RNA metabolism. Three hours of lecture and one hour of discussion per week. Students may not receive credit for both Biol 4632 and Biol 6632.

6642 Advanced Plant Molecular Biology and Genetic Engineering (3)

Prerequisite: Biol 4602 or 4612. Topics will include plant cell and developmental biology, DNA transfer into plants, using mutations to identify genes and their functions, regeneration of plants in tissue culture, signal transduction mechanisms, molecular biology of plant organelles, developmental engineering, metabolic engineering, plant microbe interactions, and engineered resistance to pathogen attack. Three hours of lecture and one hour of seminar per week. Students may not receive credit for both Biol 4642 and Biol 6642.

6652 Advanced Virology (3)

Prerequisite: Biol 2482 and 2012. An advanced comparative study of the structure, reproduction, and genetics of viruses. Three hours of lecture, one hour of discussion or seminar per week. Students may not receive credit for both Biol 4652 and 6652.

6699 Graduate Internship in Biotechnology (1-4)

Prerequisite: Graduate standing and enrollment in graduate Biotechnology Certificate Program. Six credit hours maximum (maximum of eight combined credit hours of Biol 6905 and internship). Internship will consist of period of observation, experimentation and on-the-job training in a biotechnology laboratory. The laboratory may be industrial or academic. Credit will be determined by the number of hours the student works each week and in consultation between the intern's supervisor and the instructor. Internship assignments will be commensurate with the education and experience of the student.

6889 Graduate Seminar (2)

Presentation and discussion of various research problems in biology. Graduate student exposure to the seminar process.

6905 Graduate Research in Biology (1-10)

Research in area selected by student in consultation with faculty members.

Chemistry Courses

1111 Introductory Chemistry I (5) [MS]

Prerequisite: Mathematics through college algebra and trigonometry may be taken concurrently. Presents an introduction to the fundamental laws and theories of chemistry. Laboratory experiments are designed to demonstrate some aspects of qualitative and quantitative analysis and to develop skills in laboratory procedures. Chemistry majors may not include both Chem 1082 and 1111, and both Chem 1011 and 1111 in the 120 hours required for graduation. Three hours of lecture and one hour of discussion per week, one hour of laboratory-lecture and three hours of laboratory per week.

1121 Introductory Chemistry II (5) [MI, MS]

Prerequisite: Chem 1111 or advanced placement. Lecture and laboratory are a continuation of Chem 1111. Three hours of lecture and one hour of discussion per week; one hour laboratory-lecture and three hours of laboratory weekly.

2223 Quantitative Analysis (3) [C, MI, MS]

Prerequisite: Chem 1121. Principles and practice of elementary quantitative chemistry. The lecture treats descriptive statistics with emphasis on small samples; various types of competing equilibria pertaining to acid-base, complexometric and potentiometric titrations; and an introduction to spectrophotometric processes. The laboratory provides exercises in titrimetric, gravimetric, and spectrophotometric techniques. Both portions of the course deal with the analytical chemistry of environmentally-significant problems. Two hours of lecture and four and one-half hours of laboratory weekly.

2612 Organic Chemistry I (3) [MS]

Prerequisite: Chem 1121. An introduction to the structure, properties, synthesis, and reactions of aliphatic and aromatic carbon compounds. Three hours of lecture per week.

2622 Organic Chemistry II (3) [MI, MS]

Prerequisite: Chem 2612. A systematic study of organic reactions and their mechanisms; organic synthetic methods. Three hours of lecture per week.

2633 Organic Chemistry Laboratory (2) [C, MS]

Prerequisite: Chem 2612 or consent of instructor. An introduction to laboratory techniques and procedures of synthetic organic chemistry including analysis of organic compounds. One hour of lecture and four and one-half hours of laboratory per week.

3302 Physical Chemistry for the Life Sciences (3)

Prerequisites: Chem 2612 and Math 1800 or Math 1100, and Phys 1012. Principles and applications of physical chemistry appropriate to students pursuing degree programs in the life sciences. Topics will include thermodynamics, equilibria, kinetics, and spectroscopy.

This course is intended for undergraduates seeking the B.S. degree in Biochemistry and Biotechnology and does not fulfill the physical chemistry requirement for other Chemistry B.A. and B.S. degree programs.

3643 Advanced Organic Chemistry Laboratory (2)

Prerequisites: Chem 2223, Chem 2622, Chem 2633. Chem 3022 may be taken concurrently. Identification of organic compounds by classical and spectroscopic methods; advanced techniques in synthesis and separation of organic compounds. One hour of lecture and four and one-half hours laboratory per week. Not for graduate credit.

4712 Biochemistry (3)

[Same as Biol 4712] Prerequisite: Chem 2612 and either Biol 1811 or Chem 2622. The chemistry and function of cell constituents, and the interaction and conversions of intracellular substances. Three hours of lecture per week. Students may not receive credit for both Biol 4712 and Chem 4712. Biol 4712 may not be used to fulfill the 3000 or 4000 level lecture course requirement for the B.S. in Biology.

4722 Advanced Biochemistry (3)

Prerequisite: Chem 4712. Selected advanced topics in the chemistry of life processes. Three hours of lecture per week.

4733 Biochemistry Laboratory (2)

Prerequisite: Chem 4712 may be taken concurrently. Laboratory study of biochemical processes in cellular and subcellular systems with emphasis on the isolation and purification of proteins (enzymes) and the characterization of catalytic properties. One hour of lecture and three and one-half hour of laboratory per week.

4764 Interdisciplinary Topics in Biochemistry (3)

Prerequisite: Chem 4712; Chem 4722 strongly recommended. Includes advanced studies of enzyme mechanisms, the role of metal ions in enzymatic and non-enzymatic processes, and the application of computational chemistry to biological systems. Three hours of lecture per week.

4772 Physical Biochemistry (3)

Prerequisite: Chem 3312 or Chem/Biol 4712. Designed to acquaint students with concepts and methods in biophysical chemistry. Topics that will be discussed include protein and DNA structures, forces involved in protein folding and conformational stability, protein-DNA interactions, methods for characterization and separation of macromolecules, electron transfer, and biological spectroscopy. Three hours of lecture per week.

5794 Special Topics in Biochemistry (1-3)

Prerequisite: Consent of instructor. Selected topics in biochemistry. May be taken more than once for credit.

6787 Problem Seminar in Biochemistry (1)

Prerequisite: Consent of the biochemistry staff. Problems from the current literature, presentations and discussions by faculty, students and visiting scientists Ph.D. students may take more than once for credit. Up to three credits may be applied to the M.S. degree program.

6905 Graduate Research in Chemistry (1-10)

Department of Biology

Faculty

James H. Hunt, Professor*, Chairperson
Ph.D., University of California-Berkeley
Charles R. Granger, Distinguished Teaching Professor*
Ph.D., University of Iowa
Arnold B. Grobman, Professor Emeritus*
Ph.D., University of Rochester
Elizabeth A. Kellogg, E. Desmond Lee Professor of
Botanical Studies*
Ph.D., Harvard University
Bette A. Loiselle, Professor*
Ph.D., University of Wisconsin
Robert J. Marquis, Professor*
Ph.D., University of Iowa
Patricia G. Parker, E. Desmond Lee Professor of
Zoological Studies*
Ph.D., University of North Carolina, Chapel Hill
Robert E. Ricklefs, Curators Professor*
Ph.D., University of Pennsylvania
Martin Sage, Professor Emeritus*
Ph.D., Nottingham University
Peter F. Stevens, Professor*, Director
Graduate Program
Ph.D., Edinburgh
Zuleyma Tang-Martinez, Professor*
Ph.D., University of California-Berkeley
Teresa Thiel, Professor*; Associate Dean, Arts and
Sciences
Ph.D., Case Western Reserve University
Xuemin Wang, E. Desmond Lee and Family Fund
Endowed Professor of Plant Science*
Ph.D., University of Kentucky
Lon A. Wilkens, Professor*
Ph.D., Florida State University
John G. Blake, Associate Professor*
Ph.D., University of Illinois
Godfrey R. Bourne, Associate Professor*
Ph.D., University of Michigan
Albert Derby, Associate Professor Emeritus*
Ph.D., City University of New York
Harvey P. Friedman, Associate Professor Emeritus*
Ph.D., University of Kansas
Lawrence D. Friedman, Associate Professor Emeritus*
Ph.D., University of Wisconsin
Donald E. Grogan, Associate Professor Emeritus*
Ph.D., University of Missouri-Columbia
Jane A. Starling, Associate Professor Emerita*
Ph.D., The William Marsh Rice University
Colin MacDiarmid, Assistant Professor*
Ph.D., University of Auckland
Wendy M. Olivas, Assistant Professor*
Ph.D., University of Nebraska Medical Center
Lisa M. Schechter, Assistant Professor*
Ph.D. Harvard University
Bethany K. Zolman, Assistant Professor*
Ph.D., Rice University

Lori L. Paul, Affiliate Assistant Professor*
Ph.D., Washington University
Marc Spingola, Affiliate Assistant Professor
Ph.D., University of New Mexico
Mariette P. Baxendale, Lecturer
Ph.D., Saint Louis University
Carol Weber, Lecturer, Undergraduate Advisor
M.S., University of Missouri-St. Louis
Terry L. Erwin, Research Professor*
Ph.D., University of Alberta
Peter H. Raven, Research Professor*; Director,
Missouri Botanical Garden,
Ph.D., University of California-Los Angeles
M. Jan Salick, Research Professor*
Ph.D., Cornell University
Ihsan A. Al Shehbaz, Research Associate Professor*
Ph.D., Harvard University
Bruce Allen, Research Associate Professor*
Ph.D., University of Cincinnati
Eldridge Bermingham, Research Associate Professor*
Ph.D., University of Georgia
Steven P. Churchill, Research Associate Professor
Ph.D., City University of New York
Deborah A. Clark, Research Associate Professor*
Ph.D., University of Wisconsin
David B. Clark, Research Associate Professor*
Ph.D., University of Wisconsin
Thomas B. Croat, Research Associate Professor*
Ph.D., University of Kansas
Peter Goldblatt, Research Associate Professor*
Ph.D., University of Cape Town, South Africa
Peter E. Hoch, Research Associate Professor*
Ph.D., Washington University
Peter M. Jorgensen, Research Associate Professor
Ph.D., Aarhus Universitet
Robert E. Magill, Research Associate Professor*
Ph.D., Texas A&M
David A. Neill, Research Associate Professor*
Ph.D., Washington University
Charlotte Taylor, Research Associate Professor*,
Ph.D., Duke University
Hendrik H. van der Werff, Research Associate
Professor*
Ph.D., State University of Utrecht, The Netherlands
George A. Yatskievych, Research Associate Professor*
Ph.D., Indiana University, Bloomington
James L. Zarucchi, Research Associate Professor
Ph.D., Harvard
Stanton Braude, Research Assistant Professor*
Ph.D., University of Michigan
James S. Miller, Research Assistant Professor*
Ph.D., Saint Louis University
Peter M. Richardson, Research Assistant Professor*
Ph.D., University of London
George E. Schatz, Research Assistant Professor*
Ph.D., University of Wisconsin-Madison
Maria Del Carmen Ulloa Ulloa, Research Assistant
Professor, Ph.D., Aarhus Universitet

Liming Xiong, Research Assistant Professor
Ph.D., University of Arizona
Yiji Xia, Research Assistant Professor
Ph.D., Iowa State University
Cheryl S. Asa, Research Assistant Professor*
Ph.D., University of Wisconsin-Madison
Patrick L. Osborne, Adjunct Associate Professor,
Associate Director, International Center for Tropical
Biology, Ph.D., East Anglia
Terry Jo Gile, Affiliate Assistant Professor; Jewish
Hospital College of Nursing and Allied Health
M.A., Central Michigan University
Linda J. McCown, Affiliate Assistant Professor; Jewish
Hospital College of Nursing and Allied Health
M.S., University of Pittsburgh
Michael D. Ward, Affiliate Assistant Professor, Director,
Allied Health Programs, Jewish Hospital College of
Nursing and Allied Health
Ph.D., Saint Louis University
Donna Duberg, Adjunct Lecturer; Chair CLS Program,
Jewish Hospital College of Nursing and Allied Health
M.S., Michigan State University
Linda Hoechst, Adjunct Lecturer
M.A., Webster University

*members of Graduate Faculty

General Information

Degrees and Areas of Concentration

The Department of Biology provides academic programs leading to the B.A. or B.S. in Biology. In cooperation with the College of Education, the department offers the B.S. in Secondary Education with a major in biology and the B.A. or B.S. in Biology with teacher certification. It also offers graduate work leading to the Master of Science and the Doctor of Philosophy degrees in Biology.

Biology faculty members are engaged in teaching and research in areas ranging from molecular biology to population studies. Majors have the chance to take courses that help them develop both theoretical and experimental backgrounds necessary for further work in some of the most rapidly expanding fields of biological science or to pursue in-depth studies in specific areas through advanced courses, seminars, and individualized research programs.

Department Honors Program

The Department of Biology offers an Honors Program to train students in conducting research in areas of biological research currently under study in the Department. In addition to completing all of the required coursework for a B.S. or B.A. in Biology, students must: 1) carry at least a 3.3 GPA, 2) complete a minimum 2 credit hours of Biology 4905 (Research), and 3) complete a significant piece of primary research, to be reported in an honors thesis and presented in a public forum.

The first step in conducting an undergraduate thesis is to identify a faculty research mentor. Next, and before beginning research, students should prepare a proposal detailing the overall goal of the project, a summary of the known scientific context for the research, hypotheses to be tested, and methods. This proposal will be filed with the Biology Program Honors Committee.

It is highly recommended that students arrange to work full time on their honors thesis during the summer between the junior and senior years. A limited amount of funds are available from university fellowships, but in more cases support will come from the sponsoring lab.

Prior to submitting a thesis, the student should identify three UMSL faculty readers of the thesis, one of whom should be the advisor. The thesis will be either due April 1, July 1, or November 15, depending on the intended graduation date. Readers of honors theses are expected to file their reports with the Biology Program Honors Committee within 10 days after the thesis is submitted. Based on the material presented in the honors thesis and the student's overall record, the readers of the thesis will recommend a rating of no honors, honors, high honors, or highest honors. Readers of honors theses are expected to file their reports with the Biology Program Honors Committee within 10 days after the thesis is submitted. The reports of all readers should address the quality of the science reported in the thesis, as well as the quality of the written presentation. The report of the mentor should also address the role the student played in the design, execution and interpretation of the experiments reported in the thesis, and should point out the role that others in the lab played. Completed theses, and any publications deriving from them will be archived on the Department of biology website.

The Biology Program Honors Committee will meet approximately two weeks after the due date of theses to review the recommendations of the readers and decide on the appropriate level of honors. The Committee will attempt to maintain uniform standards for honors and is not constrained by the level of honors recommended by the readers. The Committee will report their recommendation to the Dean of Arts and Sciences, so that the student is recognized at graduation as having graduated with Honors in Biology (or High Honors in Biology).

The student will present the research results in an advertised public forum, such as a class, a poster session, or a departmental seminar, but prior to submitting the thesis. The mentor will declare in the thesis evaluation letter when and where the student has made such a presentation.

Minor in Biology

Students majoring in another discipline may earn a minor in biology by completing a prescribed course of study.

Unique programs can be developed to coordinate with special career objectives.

Graduate Studies

The Department of Biology offers graduate work leading to the M.S. and Ph.D. degrees in biology. Graduate students may work toward an M.S. or Ph.D. degree in two broad areas of biology: a) cellular, molecular, and developmental biology, or b) ecology, evolution, and systematics. Students in the M.S. and Ph.D. programs also have the opportunity to do their graduate work in collaboration with scientists at the Missouri Botanical Garden or the Saint Louis Zoo through a cooperative graduate program.

Objectives of the master's degree program are to provide the research-oriented training necessary for students to enter doctoral programs in biology; to develop professional biologists qualified to function in responsible technical positions; and to train secondary school and junior college biology teachers.

The objectives of the Ph.D. program are to train biologists for academic and professional positions in research and teaching. Ph.D. students in the areas of plant systematics and environmental studies have the opportunity for specialized training in tropical biology and conservation biology. This training prepares students for research careers and for leadership and scientific positions involving the conservation and management of tropical ecosystems. Ph.D. students in cellular, molecular and developmental biology will receive training in research techniques appropriate for careers in academic or industrial laboratories.

Graduate Assistantships

Stipends for teaching and research assistantships are awarded on a competitive basis to qualified graduate students in master's or Ph.D. programs. Educational fees are waived for graduate assistants. Applications for assistantships must be sent to the Director of Graduate Studies in the Department of Biology and be received by December 1.

Facilities

Department facilities include research and teaching laboratories, environmental chambers, greenhouses, and a large array of supporting modern research instrumentation. Graduate research can be pursued using facilities of the Missouri Botanical Garden or the Saint Louis Zoo. Several sites within an hour of campus are suitable for regional field studies, including state parks, wildlife conservation areas, and Washington University's Tyson Research Center. UM-St. Louis is a member of the St. Louis University Research Station Consortium that operates Lay and Reis Field Stations in Missouri and it also holds membership in the Organization for Tropical Studies, which operates three field stations in Costa Rica. CEIBA Biological Centre in Guyana has hosted several UM-St.

Louis courses and student researchers. Student researchers work independently at research stations throughout the tropics.

Cooperative Programs

The department participates in a cooperative consortium program in biology with Washington University, Saint Louis University, Southern Illinois University-Edwardsville, and the Missouri Botanical Garden.

Undergraduate Studies

General Education Requirements

Students must satisfy the university and college general education requirements. Some Biology courses may be used to meet the science and mathematics requirement of the university.

Candidates for the B.A. degree must fulfill the foreign language requirement of the College of Arts and Sciences. There is no foreign language requirement for the B.S. degree.

Satisfactory/Unsatisfactory Option

Up to 18 credit hours may be taken on a satisfactory/unsatisfactory (s/u) basis. Excluded from this option are required courses in biology, chemistry, physics, and mathematics.

Non-major biology courses

The following 1000 level biology courses do not count toward the biology credit hours required for a major in biology. Moreover, if biology majors take these courses, they are treated as biology courses when computing the 70 credit hours outside of biology needed to be included in the 120 total credit hours required for graduation.

- 1102, Human Biology
- 1131, Human Physiology and Anatomy I
- 1141, Human Physiology and Anatomy II
- 1162, General Microbiology
- 1202, Environmental Biology
- 1850, Global Ecology

Degree Requirements

Bachelor of Arts in Biology

The B.A. degree provides maximum flexibility for biology majors to pursue an undergraduate liberal arts course of study that can lead to professional careers in medicine, allied health, public and environmental health, law, and graduate studies in the life sciences. Candidates must have a cumulative grade point average of 2.0 or better in biology courses.

All B.A. degree majors must take at least 39 credit hours but not more than 50 hours in appropriate biology course work. Transfer student must satisfactorily complete at least 12 credit hours of UM-St. Louis biology course work

(including one laboratory) at the 2000 level or above before receiving a B.A. degree from the College of Arts and Sciences with a major in biology.

Lecture and Seminar Course Requirements

1) **Core Courses.** The following biology courses or their equivalents are required:

1811, Introductory Biology: From Molecules to Organisms
1821, Introductory Biology: Organisms and the Environment
2012, Genetics
3302, Introduction to Evolution
3622, Cell Biology
4889, Senior Seminar, or 4985 and 4986 for those seeking teacher certification.

One of the following diversity courses:

2402, Vertebrate Biology or
2442, Invertebrate Biology or
2482, Microbiology or
2501, Biology of Plants or
4402, Ornithology or
4422, Entomology or
4482, Parasitology or
4501, Flowering Plants Families

2) **Elective Courses.** Three additional biology lecture courses, at the 2000 level or higher are required. They may be selected from any of the lecture or lecture-laboratory courses offered. Selection of these courses should reflect the career interest of the student. Biology courses taken to fulfill basic skill requirements (e.g., statistics requirement or biochemistry option) can be used to satisfy this requirement.

At least two biology lecture courses taken as part of the core or as electives must be at the 4000 level or higher. No more than one of these higher level courses can be used to fulfill other requirements (e.g., diversity or statistics requirements, or biochemistry option).

Laboratory Course Requirements

Three biology laboratory courses at the 2000 level or higher are required. They may be taken from any of the lecture-laboratory or laboratory courses offered. Two credit hours of Biol 4905 can be used to fulfill one laboratory requirement. Students may take Chem 4733 to satisfy one of these laboratory course requirements, but students may not use both Biol 4713 and Chem 4733 to fulfill this requirement.

Basic Skills Requirement

A well-rounded biologist needs certain skills outside the biology subject matter. The basic skills requirement is designed to provide the student with a background in communication skills and knowledge in associated science areas.

1) **Communication Skills.** Courses in foreign languages and in writing are required for development of the basic communication skills needed to transmit scientific information. The following satisfy this requirement:

Foreign Language

The foreign language requirement of the College of Arts & Sciences fulfills the departmental requirement.

Writing

Eng 3100, Advanced Expository Writing or
Eng 3160, Writing in the Sciences (strongly preferred)

2) **Associated Science Area.** The following courses or their equivalents must be successfully completed in science areas related to biology:

Phys 1011, Basic Physics

Phys 1012, Basic Physics

Chem 1111, Introductory Chemistry I, or

Chem 1082 and Chem 1091

Chem 1121, Introductory Chemistry II

Chem 2612, Organic Chemistry I

One of the following:

Chem 2223, Quantitative Analysis or

Chem 2622, Organic Chemistry II or

Chem 2633, Organic Chemistry Laboratory or

Biol/Chem 4712, Biochemistry

Math 1310, College Algebra

Math 1035, Trigonometry

Math 1100, Basic Calculus or

Math 1800, Analytical Geometry and Calculus

One of the following:

Biol 4122, Biometry or

Math 1310, Elementary Statistical Methods or

Math 1320, Applied Statistics I or

Ed Rem 5730, Educational Statistics or

Psych 2201, Psychological Statistics

Bachelor of Science in Biology

The B.S. degree in biology is designed to prepare students for basic technical positions and graduate studies in the life sciences. Candidates for the degree have the same core courses and general education requirements as those seeking the Bachelor of Arts degree, as well as additional requirements in depth of study, laboratory experience, communication skills, and background in associated science areas. Candidates must have a cumulative grade point average of 2.0 or better in biology courses.

There is no foreign language requirement for the B.S. degree. However, students should realize that the literature for biological studies is in many different languages and the ability to extract information from this literature is an important skill.

To fulfill the requirements for the B.S. degree a minimum of 44 hours but not more than 50 hours must be completed in appropriate biology course work. Transfer students must satisfactorily complete at least 17 credit hours of UM-St. Louis biology course work (including two laboratory courses) at the 2000 level or higher before receiving a B.S. degree in biology.

Lecture and Seminar Course Requirements

1) **Core Courses.** The following biology courses or their equivalents are required:

1811, Introductory Biology: From Molecules to Organisms
1821, Introductory Biology: Organisms and the Environment
2012, Genetics
3302, Introduction to Evolution
3622, Cell Biology
4889, Senior Seminar or 4985 and 4986 for those seeking teacher certification.

One of the following diversity courses:

2402, Vertebrate Biology or
2442, Invertebrate Biology or
2482, Microbiology or
2501, Biology of Plants or
4402, Ornithology or
4422, Entomology or
4482, Parasitology or
4501, Flowering Plants Families

2) **Elective Courses.** Four additional biology lecture courses at the 2000 level or higher are required. They may be selected from any of the lecture or lecture-laboratory courses offered. Selection of these courses should reflect the career interest of the student. Biology courses taken to fulfill basic skill requirements (e.g., statistics requirement or biochemistry option) can be used to satisfy this requirement.

At least three biology lecture courses taken as part of the core or as electives must be at the 4000 level or higher. No more than two of these higher level courses can be used to fulfill other requirements (e.g., diversity or statistics requirements, or biochemistry option).

Laboratory Course Requirements

Four biology laboratory courses at the 2000 level or higher are required. They may be selected from any of the lecture-laboratory or laboratory courses offered. Two credit hours of Biol 4905 can be used to fulfill one laboratory requirement. Students may take Chem 4733 to satisfy one of these laboratory course requirements, but students may not use both Biol 4713 and Chem 4733 to fulfill this requirement.

Basic Skills Requirement

A well-rounded biologist needs certain skills outside the biology subject matter. The basic skills requirement is designed to provide the student with a background in communication skills and knowledge in associated science areas.

1) **Communication Skills.** Courses in both formal speaking and writing are required for development of the basic communication skills needed to transmit scientific information. The following courses satisfy this requirement:

Formal Speaking
Comm 1040, Introduction to Public Speaking

Writing
Eng 3100, Advanced Expository Writing or
Eng 3160, Writing in the Sciences (strongly preferred)

2) **Associated Science Area:** The following courses or their equivalents must be successfully completed:

Phys 1011, Basic Physics
Phys 1012, Basic Physics

Chem 1111, Introductory Chemistry I, or
Chem 1082 and Chem 1091
Chem 1121, Introductory Chemistry II
Chem 2612, Organic Chemistry I
Chem 2622, Organic Chemistry II or
Biol/Chem 4712, Biochemistry
Chem 2223, Quantitative Analysis or
Chem 2633, Organic Chemistry Laboratory

Math 1030, College Algebra
Math 1035, Trigonometry
Math 1100, Basic Calculus, or
Math 1800, Analytic Geometry and Calculus I

One of the following:
Biol 4122, Biometry or
Math 1310, Elementary Statistical Methods or
Math 1320, Applied Statistics I or
Ed Rem 5730, Educational Statistics or
Psych 2201, Psychological Statistics

One of the following:
Phil 2256, Bioethics or
Phil 3380, Philosophy of Science

Research Opportunity

All students acquiring a bachelor of science degree are strongly encouraged to complete a minimum of 2 credit hours of undergraduate research, Biol 4905. The privilege of doing undergraduate research provides students with a firsthand opportunity to experience the research process under the supervision of a faculty member or off-campus scientist. The project normally includes a library search of

pertinent literature, laboratory or field experience, and a summary paper.

Bachelor of Science in Education with Emphasis in Biology

The B.S. Ed. is a professional degree designed for individuals who wish to pursue a teaching career in biology in the secondary schools. The biology requirements parallel those for the B.A. degree with the exception that Biol 4985, Curriculum and Methods of Teaching Life Sciences, and Biol 4986, Laboratory in Teaching Life Sciences, are substituted for Biol 4889, Senior Seminar. Students must also fulfill the requirements for the B.S. Ed. degree as prescribed by the College of Education.

Bachelor of Arts in Biology with Teacher Certification

Biology majors interested in teaching biology in secondary schools may obtain teacher certification in cooperation with the College of Education by fulfilling the B.A. or B.S. with certain prescribed courses in biology, with the exception of Biol 4889, Senior Seminar, and in addition, completing the following courses:

Psych 1003, General Psychology
Ed Fnd 1111, The School in Contemporary Society
Eng 3160, Writing in the Sciences
History 1001, 1002, or 1003, American Civilization
PolSci 1100, Introduction to American Politics
Phil 3380, Philosophy of Science
Comm 1040, Introduction to Public Speaking
Theater 1210, Fundamentals of Acting
Geology 1001, General Geology
Atmospheric Science 1001, Elementary Meteorology
Ed Psy 3312, The Psychology of Teaching and Learning
Ed Tec 2248, Utilization of Computer-Based Materials in Instruction
Sec Ed 3213, Techniques of Secondary School Teaching and Field Experience **or**
Tch Ed 3310, Introduction to Instructional Methods
Spec Ed 3313, The Psychology and Education of Exceptional Individuals
Sec Ed 4391, Teaching Reading in Secondary School
Content Areas
Biology 4985, Curriculum and Methods of Teaching Life Sciences
Biology 4986, Laboratory in Teaching Life Sciences
Sec Ed 3290, Secondary School Student Teaching
Biol 4999, Science Teaching Intern Seminar

Since specific biology courses are required for teaching endorsement, contact the Department of Biology **AND** the College of Education for special advising regarding teacher certification.

Minor in Biology

Students may minor in biology by completing a minimum of 19 credit hours in biology, of which at least 9 hours of

the biology course credits must be taken in residence at UM-St. Louis.

Requirements are:

Biol 1811, Introductory Biology: From Molecules to Organisms, **Biol 1821**, Introductory Biology: Organisms and the Environment, and **Biol 2102**, Genetics. Two additional courses totaling no less than 6 credit hours. At least one course should be at the 3000 level or above

All students must consult with an adviser to plan an appropriate course of study. This program must be approved by the chairperson of the Department of Biology. Under certain circumstances, a student may deviate from the prescribed course of study and substitute a group of courses that exhibit a coherent area of specialization to coordinate with a career objective. Such a candidate must receive prior approval by the biology department to pursue this program.

Candidates must have a cumulative grade point average of 2.0 or better in the minor, and **none of the courses may be taken on a satisfactory/ unsatisfactory (s/u) basis.**

Undergraduate Certificate in Biochemistry

The university offers a certificate program for science majors who are interested in careers in biochemistry. The Biochemistry Certificate is an interdisciplinary specialization that may be earned within either a **biology** major or a **chemistry** major. To earn the certificate, biology majors must enroll in the Biochemistry Certificate Program upon the completion of 60 credit hours, fulfill all the science (biology, chemistry, math, and physics) course requirements for the B.S. degree in biology, and successfully complete the following courses:

Chem 2622, Organic Chemistry II
Biol/Chem 4712, Biochemistry
Chem 2223, Quantitative Analysis
Chem 2633, Organic Chemistry Laboratory
Biol 4713, Techniques in Biochemistry **or**
Chem 4733, Biochemistry Laboratory
Chem 4722, Advanced Biochemistry
And three of the following biology courses:
2482, Microbiology
2483, Microbiology Laboratory
3642, Development
4602, Molecular Biology
4612, Molecular Genetics of Bacteria
4614, Biotechnology Laboratory I
4622, Molecular Cell Biology
4632, Nucleic Acid Structure and Function
4842, Immunobiology

Undergraduate Certificate in Biotechnology

The university offers an undergraduate certificate program for biology majors who are interested in careers in biotechnology including biochemistry, microbiology, molecular biology, cell biology, and developmental

biology. To earn the certificate, biology majors must enroll in the Biotechnology Certificate Program upon the completion of 60 credit hours, fulfill all the science (biology, chemistry math, and physics) course requirements for the B.S. degree in biology, and successfully complete the following courses:

Biol 2013, Genetics Laboratory
Biol 2482, Microbiology
Biol 2483, Microbiology Laboratory
Chem 2622, Organic Chemistry II
Biol 4614, Biotechnology Laboratory I
Biol/Chem 4712, Biochemistry
Biol 4713, Techniques in Biochemistry or
Chem 4733, Biochemistry Laboratory

One of the following courses:

Biol 4602, Molecular Biology
Biol 4612, Molecular Genetics of Bacteria

And one of the following courses:

Biol 4615, Biotechnology Laboratory II
Biol 4622, Molecular Cell Biology
Biol 4632, Nucleic Acid Structure and Function
Biol 4652, Virology
Biol 4842, Immunobiology
Chem 4722, Advanced Biochemistry

Undergraduate Certificate in Conservation Biology

The Certificate in Conservation is a multidisciplinary program of study integrating theoretical and applied topics associated with conservation biology. The certificate is intended for undergraduate students with majors in biology or in any other field who wish to develop a specialization in conservation. The certificate is offered by the Department of Biology in cooperation with the departments of Anthropology, Economics, History, Political Science, Social Work, and Sociology. Building on a core curriculum, students can elect courses from these departments to complete their requirements. Regularly enrolled undergraduates at UM-St. Louis or individuals with baccalaureate degrees who wish to receive a Certificate in Conservation Biology are eligible to participate in the conservation certificate program. To participate, students must apply to the certificate program. Application forms are available from the biology department. Guidelines for admission to the certificate program are also available. Individuals with baccalaureate degrees who are interested in this certificate must apply to the university as unclassified undergraduates. The certificate requires completion of 21 credit hours, outlined below. Students should consult the *Bulletin* with regard to prerequisites for any of the courses listed here.

Core Courses

Biology

2102, General Ecology
3202, Conservation Biology
3203, Conservation Biology Laboratory

4299, Practicum in Conservation

Electives: The remaining 11 credits must be selected from courses listed below. Five credits must be taken from within biology and 6 credits outside biology, from at least two departments.

Anthropology

2120, Native Peoples of North America
2131, Archaeology of Missouri
2132, Archaeology of North America

Biology

3122, Tropical Resource Ecology
3123, Tropical Resource Ecology Field Studies
4102, Behavioral Ecology
4112, Evolution of Animal Sociality
4182, Population Biology
4202, Wildlife Ecology and Conservation
4203, Wildlife Ecology and Conservation Laboratory
4245, Field Biology
4382, Introduction to Marine Science
4402, Ornithology
4403, Ornithology Laboratory
4422, Entomology
4423, Entomology Laboratory
4501, Flowering Plant Families: Phylogeny and Diversification

Economics

3300, International Economic Analysis
3301, Intermediate Economic Theory: Microeconomics
4550, Natural Resource Economics

History

3000, Selected Topics, when relevant

Political Science

3480, Environmental Politics
3590, Studies in Comparative Politics, when relevant
3850, International Organizations and Global Problem Solving
4510, Comparative Public Policy and Administration

Social Work

3900, Seminar in Social Work, when relevant

Sociology

3420, World Population and Ecology
4470, Demographic Techniques

Preprofessional Graduation

The Department of Biology sponsors a 3+4 Program for the UM-St. Louis College of Optometry.

In this program students may be admitted to the College of Optometry after completing three years (90 semester hours) of study in the Department of Biology. The

undergraduate degree is granted when students satisfactorily complete the first year of optometry school. One or more of the following conditions must be met in order to qualify for the undergraduate degree.

All general education requirements and all requirements for the major, except electives, must be completed. Any deficiency in required courses must be remedied with courses taken at UM-St. Louis within three years after entering the College of Optometry. Up to 6 hours from the College of Optometry may be substituted for undergraduate degree requirements, with approval of the Department of Biology.

UMSL –Logan College (3+3 program)

The Biology Department has developed a 3+3 articulation agreement with Logan College of Chiropractic. This program enables qualified students the opportunity to complete a Bachelor of Science degree in Biology for the University of Missouri – St. Louis as well as a Doctor of Chiropractic for Logan College of Chiropractic in six years.

- **The program is only open to students who enter UMSL as first-time freshmen.**
- Participants must complete their first 90 hours of college work (3 years) at UMSL following a prescribed curriculum.
- Participants who have achieved at least 3.25 GPA at UMSL will automatically be granted admission by Logan College of Chiropractic.
- After successfully completing an additional 30 credit hours (4th year) at Logan, a student will receive a BS in Biology degree from UMSL.
- After completing two additional years at Logan, the student will receive a doctorate in chiropractic.
- The acceptance of transfer credits or testing toward completion of degree requirements shall be governed by current policies of UMSL. However, no more than 20 credits of required courses, and NONE of the science credits required for admission to LCC may be earned via examination or transfer from another school.
- LCC shall accept, for the entrance date of their choice, all students who successfully complete the Pre-Chiropractic Program with a cumulative GPA of 3.25 or higher and meet all other criteria for admission.
- Students who earn less than a 3.25 GPA, but at least a 2.50 GPA, will be eligible for admission to LCC, and will receive appropriate consideration in the admission process for having completed the UMSL Pre-Chiropractic Program, but will not receive the assurance of a seat reserved for students earning a 3.25 or higher GPA.
- Students will make application to LCC one year in advance of their desired entrance date and will complete all required application procedures

thereafter in a timely manner, including submission of recommendation and a satisfactory interview.

This program offers benefits to students (six years instead of seven from high school to doctorate). The University of Missouri courses are listed below:

General Education Requirements (33):

Humanities (9) Select from General Education List
Social Sciences (One course must be a Psychology) (9)
Select from General Education List of courses meeting Social Science Gen. Ed requirements.
American History & Government (3)

Choose (3):

Stats 1310, Elementary Statistical Methods;
or
Stats 1320, Applied Statistics I or
Biol 4122, Biometry
Comm 1040, Introduction to Public Speaking (3)
Eng 1100, Freshman Composition (3)
Eng 3160, Writing in the Sciences (3)
Cultural Diversity Requirement (3)

Major (58):

Foundation courses

Biol 1811, Introductory Biology: From Molecules to Organisms (5)
Biol 1821, Introductory Biology: Organisms and the Environment (5)
Biol 2012, Genetics (3)
Biol 2482, Microbiology (3)
Biol 3622, Cell Biology (3)
Biol 3302, Introduction to Evolution (3)
Biol/Chem 4712, Biochemistry (3)
Biol 4889, Senior Seminar (2)
Phys 1011, Basic Physics (4)
Phys 1012, Basic Physics (4)
Chem 1111, Introductory Chemistry I (5)
Chem 1121, Introductory Chemistry II (5)
Chem 2612, Organic Chemistry I (3)
Chem 2622, Organic Chemistry II (3)
Chem 2633, Organic Chemistry Laboratory (2)
Phil 2256, Bioethics (3)
Math 1030, College Algebra (3)
Math 1035, Trigonometry (2)

Choose (3-5):

Math 1100, Basic Calculus (3); or
Math 1800, Analytical Geometry &
Calculus I (5)

The remaining 30 hours to be taken at Logan include:

Transfer Credits (34):

Anatomy I / Lab (6)
Spinal Anatomy / Lab (5)
Biochemistry I / Lab (4)
Histology / Cell Biology / Lab (5)

Anatomy II / Lab (6)
Neuroanatomy / Lab (5)
Biochemistry II (4)
Physiology I (4)
Microbiology / Lab (4)

Graduate Studies

Master of Science in Biology

The Department of Biology offers two ways of achieving the Master of Science degree. The first is a non-thesis option suitable for those who may already have extensive research experience, for educators who seek to upgrade their academic skills but do not require research experience, or for those who need to broaden their biological background. The second is a traditional apprenticeship in research leading to a written thesis. All students admitted to the graduate program are considered to be in the non-thesis program unless they have been accepted into an individual faculty lab. Starting with a common core, both the non-thesis or thesis option may be developed into a final degree program in either of two broad areas in biology: 1) Cell and Molecular Biology or 2) Ecology, Evolution, and Systematics.

M.S. Admission Requirements

Applicants to the M.S. program must submit completed application and personal data forms, three letters of recommendation from undergraduate faculty, and transcripts of all previous work. Submission of Graduate Record Examination scores, although not required, is highly recommended and will be helpful for positive consideration of admittance. Admission as a regular graduate student requires graduation from an accredited college with a minimum grade point average overall and in biology courses of 3.0 (where A = 4.0).

All foreign applicants, except those from countries where English is the primary language, must take the TOEFL. Ordinarily, a score of 213 on the computer-based exam (550 on the paper-based exam) or better is required. In addition to the Graduate School admission requirements, applicants should have completed advanced undergraduate biology courses including genetics, biochemistry, and evolution. Courses in organic chemistry, college physics, and calculus are also expected, and a course in statistics is highly recommended. Students admitted to the degree program who have not met some of the prerequisites may be asked to pass appropriate courses before graduating. These courses will be agreed upon by the student's adviser, the student, and the Director of

Graduate Studies during the first semester of enrollment. In particular, undergraduate deficiencies in genetics and either biochemistry or evolution shall be made up by taking the appropriate course(s).

Three credits of Biol 4920 Selected Topics can be given to graduate students for Biol 2012 or Biol 3302, if they receive a grade of B or better for all undergraduate course

work and complete a graduate level paper assigned by the instructor. Instructor consent is required.

M.S. Degree Requirements

Advisers

All incoming thesis and non-thesis students will be assigned an academic adviser by the Director of Graduate Studies upon admission to the graduate program.

In the event that a student's interest changes or the faculty adviser feels the student's direction no longer falls within his/her area of expertise, the student and adviser should discuss whether a change of adviser is warranted. The graduate director must be notified in writing of any change in advisers. If a student or adviser is uncomfortable discussing the issue directly with each other, he/she is encouraged to meet with the director or associate director of the graduate program.

General Requirements

All students are required to take at least 4 but not more than 8 hours of Biol 6889, Graduate Seminar.

Non-thesis Option

Including the general requirements, students must take at least 30 graduate credit hours, of which at least half must be at the 5000 or 6000-level. Students are encouraged to take a laboratory course (4000 level or higher) or 2 credit hours of Biol 6905, Graduate Research. A maximum of 5 credit hours of Biol 6905, will be counted toward the 30 credit hour total. This research may be conducted in the laboratory or the field.

Thesis Option

Including the general requirement, students must take at least 30 graduate credit hours, of which at least half must be at the 5000 or 6000 level. No more than 13 hours of Biol 6905, Graduate Research, may be counted toward the degree.

The student and adviser work together to develop a research plan. The thesis proposal must be approved by the student's adviser and advisory committee before the student enrolls in more than 4 credit hours of Biol 6905, Graduate Research, and before the student has completed 15 credit hours in the master's program. A thesis embodying results of original research shall be submitted to and approved by the Department of Biology and the Graduate School. This approval requires both a written thesis and oral presentation and defense.

Ph.D. in Biology

The doctoral program emphasizes empirical and theoretical approaches to biological research. Students are required to integrate basic skills in biology with focal studies in an emphasis area. The program is designed to provide research experience and training appropriate for

advanced positions in academic research and teaching, government and public agencies, and industry.

Ph.D. Admission Requirements

Applicants to the Ph.D. program must submit a formal application to the Graduate Admissions Office. In addition, the applicant should arrange to have sent: three letters of recommendation from faculty members at previously attended colleges or universities, GRE scores (Verbal, Quantitative, and Analytical), and transcripts of all postsecondary academic work. Admission to the Ph.D. program normally requires a minimum grade point average overall and in biology courses of 3.0 (where A=4.0).

Applicants from countries where English is not a primary language are required to take the TOEFL examination. Scores must be submitted before admission can be decided. Ordinarily, a score of 550 or better is required. Applicants should have a bachelor's or M.S. degree from an accredited United States college or university or evidence of equivalent training at an accredited institution outside the United States.

Applicants should have the appropriate background for graduate work in biology, including courses in genetics, biochemistry, and evolution. Courses in organic chemistry, college physics, and calculus are expected. A course in statistics is recommended. Students admitted to the Ph.D. program who have not met all the prerequisites may be required to make up deficiencies before admission to candidacy. The deficiencies will be decided during orientation meetings prior to the start of the second semester. Three credits of Biol 4920 Selected Topics can be given to graduate students for Biol 2012 or Biol 3302 if they receive a grade of B or better for all undergraduate course work and complete a graduate-level paper assigned by the instructor. Instructor consent is required.

Ph.D. Degree Requirements

In addition to the general requirements of the Graduate School, the basic requirements for the Ph.D. degree in Biology include 60 graduate credit hours. At least 30 of the 60 hours must be taken at the 5000 or 6000 level. With the explicit consent of the advisory committee, students may take for graduate credit up to 3 credit hours of 3000 level courses in allied departments. Courses in biology at the 3000 level and below are not available for graduate credit. At least 31 of the 60 hours must be taken while in residence at the University of Missouri-St. Louis. Graduate credit for course work transferred from another program is subject to approval by the graduate committee and by the Graduate School. Graduate courses taken elsewhere will be considered for transfer credit during orientation meetings conducted prior to the start of the second semester of enrollment.

Specific courses shall be completed as follows:

Biol 4122 (3 hours), Biometry, or equivalent course in statistics.

Biol 6889 (2 hours), Graduate Seminar.

Three semesters required (6 credits total).

12 hours of formal course work required by the student's emphasis area at the time a student is admitted to the Ph.D. program.

The maximum number of credit hours that may be applied toward the 60-hour requirement is limited as stated below:

Biol 6889, Graduate Seminar: 10 hours

Biol 6905, Graduate Research: 30 hours

A combination of 6 total credit hours of the following:

Biol 5059, Topics in Ecology, Evolution, and Systematics

Biol 5069, Topics in Cellular and Molecular Biology

Biol 5079, Topics in Floristic Taxonomy

First-Year Experience

Graduate students are expected to become involved in a research experience during their first-year program, usually winter semester or summer session.

Qualifying Examination

Students must pass a qualifying examination (which consists of a written and oral component), based on fundamental principles presented in formal courses and in papers of special importance in the field. The exam will be given in January of each year, at the beginning of the winter semester. Students beginning studies in the fall semester would normally take the qualifying examination prior to their fourth semester of full-time study. Doctoral students who have earned an M.S. degree previously are encouraged to take the examination in their first year.

Admission to Candidacy

To be admitted to candidacy, students must satisfy the requirements of the Graduate School, which includes passing all qualifying examinations and completing all required course work.

Dissertation Proposal

All students must defend orally a written dissertation proposal to their dissertation committee. The approved proposal must be submitted to the director of graduate studies in biology. Doctoral students may not enroll in more than 4 credits of graduate research (Biology 6905) before they have received approval for their dissertation proposal.

Dissertation

A dissertation embodying the results of original research shall be submitted to and approved by the Department of Biology and the Graduate School. The general regulations of the Graduate School concerning the preparation of the dissertation must be met. These rules include a public oral defense of the written dissertation. Dissertations are to be presented in a style appropriate for one or more publications in scientific journals.

Teaching

At least one semester of supervised teaching is required of all doctoral students.

Graduate Certificate in Biotechnology

The Graduate Certificate in Biotechnology is offered for students with a bachelor's degree who wish to obtain advanced level training in those fields of biology that pertain to biotechnology without necessarily earning a master's degree. Students who enter this program may have a variety of interests, including biochemistry, microbiology, molecular biology, cell biology, developmental biology, or molecular evolution.

Admission

Students who wish to earn a Graduate Certificate in Biotechnology must apply to the Biotechnology Certificate Program for admission to the program. Students must be enrolled in the graduate program at the University of Missouri-St. Louis either as non-degree students or as master's students.

Students who wish to obtain a master's degree with a Biotechnology Certificate must be accepted into the Master's degree program in Biology as well as into the Biotechnology Certificate Program. Students who apply to the certificate program as non-degree students will earn only the certificate.

Students must have at least a 3.0 GPA for undergraduate course work to be accepted into the program. The minimum course prerequisites for admission to the program are undergraduate courses in genetics, cell biology, and biochemistry.

Requirements

Students must maintain a minimum GPA of 3.0 to remain in the certificate program. The certificate is awarded after completion of the courses listed below. Students enrolled in the Master's program may simultaneously earn a graduate degree and count the appropriate courses from the list below toward the Biotechnology Certificate.

The biotechnology certificate requires **18 credit hours** of course work.

Requirements

I. Biology 6615, Advanced Biotechnology Laboratory II

II. Biology 6602, Advanced Molecular Biology **or**
Biology 6612, Advanced Molecular Genetics of Bacteria
(If both Group II courses are taken, one may be used as elective credit)

III. The remaining 11 credit hours must be taken from the following **electives**:

Biology

4712, Biochemistry
4842, Immunobiology
5069, Topics in Cellular and Molecular Biology

5842, Advanced Immunology
6622, Advanced Molecular Cell Biology
6632, Advanced Nucleic Acid Structure and Function
6642, Advanced Plant Molecular Biology and Genetic Engineering
6652, Advanced Virology
6699, Graduate Internship in Biotechnology
6889, Graduate Seminar, when relevant

Chemistry

4722, Advanced Biochemistry
4733, Biochemistry Laboratory

Graduate Certificate in Tropical Biology and Conservation

The certificate is awarded after completion of 18 credit hours of core courses and electives with a minimum of 12 credits at the 5000 or 6000 level. Up to 3 credits may be taken at the 2000 - 3000 level upon permission of the Graduate Committee. Electives must include a minimum of 3 credits outside biology with a maximum of 7 outside biology. A maximum of 3 credits may be taken elsewhere than UM-St. Louis. Students may simultaneously earn a graduate degree and count credits earned in their degree program toward the certificate when appropriate.

Required Core Courses:

Biology 6250, Public Policy of Conservation and Sustainable Development
Biology 6299, Internship in Conservation Biology (May be replaced with a biology elective for individuals with applied conservation or environmental agency experience upon consent of the Graduate Committee).

Choice of:

Biology 6212, Theory and Application of Conservation Biology

Biology 6222, Advanced Tropical Ecology and Conservation

Electives:

Biology

4382, Introduction to Marine Science

4182, Population Biology

4202, Wildlife Ecology and Conservation

4402, Ornithology

4422, Entomology

4501, Flowering Plant Families Phylogeny and Diversification

5122, Advanced Tropical Resource Ecology

5123, Advanced Tropical Resource Ecology Field Studies

5192, Community Ecology

6102, Advanced Behavioral Ecology

6112, Advanced Evolution of Animal Sociality

6182, Advanced Population Biology

6192, Applications of Geographic Information Systems

6212, Theory and Application of Conservation Biology

6222, Advanced Tropical Ecology and Conservation

6889, Graduate Seminar, when relevant

Economics

3300, International Economic Analysis

3301, Intermediate Economic Theory:

Microeconomics

4550, Natural Resource Economics

History

3000, Selected Topics in History, when relevant

3201, History of Latin America: to 1808

3202, History of Latin America: Since 1808

3302, West Africa Since 1800

6114, Readings in Latin American History, when relevant

6115, Readings in African History, when relevant

Political Science

2530, Political Systems of South America

2540, Political Systems of Mexico, Central America, and the Caribbean

2580, African Politics

3480, Environmental Politics

3590, Studies in Comparative Politics, when relevant

3830, International Political Economy

3850, International Organizations and Global Problem Solving

3890, Studies in International Relations

4470, Introduction to Environmental Law and Policy

4510, Comparative Public Policy and Administration

4850, International law

4940, Leadership and Management in Nonprofit Organizations

6414, Topics in Public Policy Analysis, when relevant

6448, Political Economy and Public Policy

6459, Seminar in Latin American Politics, when relevant

6462, Political Theory and Public Policy

6490, Seminar in International Relations

Social Work

4950, Seminar in Social Work Issues, when relevant

Sociology

4342, World Population and Ecology

4646, Demographic Techniques

5426, Community and Regional Conflict Resolution

Career Outlook

The biology degree programs, at the baccalaureate and master's degree levels, are designed to prepare the student for further training. The undergraduate degree is designed to prepare the student for professional training in areas such as medicine, dentistry, veterinary medicine, optometry, and related areas, or for further graduate training in research. The Master of Science program is an extension of the undergraduate program and has as its goals three main objectives:

Provide research-oriented training and education.

Provide qualified graduates for doctoral programs.

Provide secondary school and junior college biology teachers with training necessary to maintain and improve their teaching effectiveness.

The Ph.D. program prepares students as research professionals in fields such as biological conservation, ecology, and biomedical science. Employment opportunities are available in college or university research and teaching, in government and public institutions such as museums and botanical gardens, and in industry.

Course Descriptions

Prerequisites may be waived by consent of the department or instructor. Some courses as indicated in the course description may be taken concurrently with the listed offering. Consult an adviser for further information.

Students who have earned 24 or more semester hours of credit at any accredited post-secondary institutions(s) before the start of the fall 2002 semester must meet the general education requirements stipulated in the UM-St Louis 2001-2002 Bulletin. The following courses fulfill the Natural Sciences and Mathematics breadth of study requirements as described in that Bulletin:

1012, 1013, 1081, 1102, 1131, 1141, 1162, 1202, 1811, 1821, 2012, 2013, 2102, 2103, 2402, 2403, 2442, 2443, 2482, 2483, 2501, 3102, 3103, 3122, 3123, 3182, 3183, 3202, 3203, 3302, 3622, 3642, 3643, 3802, 3803, 3920, 4102, 4112, 4122, 4162, 4182, 4202, 4203, 4222, 4245, 4402, 4403, 4422, 4423, 4482, 4501, 4532, 4552, 4602, 4612, 4614, 4615, 4622, 4632, 4642, 4652, 4712, 4713, 4822, 4842, 4889

1012 General Biology (3), [MS]

Emphasis on fundamental principles of biology. Biol 1012 can be applied toward fulfillment of the general education requirement in science. Biol 1012 does not satisfy the prerequisite requirements in other courses in biology at the 2000 level or above. Students who plan to pursue a career in medicine or one of the medical-oriented professions should enroll in Biol 1811 rather than Biol 1012. Three hours of lecture per week.

1013 General Biology Laboratory (2), [MS]

Prerequisite: Biol 1012 (may be taken concurrently). Laboratory course to accompany Biol 1012. Biol 1013 can be used to fulfill the general education requirements in a laboratory science. Biol 1013 does not meet the prerequisite requirements for other courses in biology. Three and one-half hours of laboratory per week.

1102 Human Biology (3) [C, MS]

Lectures and readings concerned with the reproduction, development, genetics, functional anatomy, behavior, ecology, and evolution of the human species. Three hours of lecture per week.

1131 Human Physiology and Anatomy I (4), [MS]

Prerequisite: Biol 1012 or its equivalent. The basic aspects of the structure of the healthy human body and how it functions. Special emphasis is on how the human body adapts itself to its environment and how changes affect physiological activities. Three hours of lecture and two hours of laboratory per week.

1141 Human Physiology and Anatomy II (4), [MS]

Prerequisite: Biol 1131. A continuation of Biol 1131. A study of the basic aspects of human physiology and anatomy. Three hours of lecture and two hours of laboratory per week.

1162 General Microbiology (3), [MS]

Prerequisite: Biol 1012 or its equivalent. A survey of microbial structure, genetics, and physiology. Special emphasis will be placed on the transmission and control of such organisms as they relate to the maintenance of human health. Three hours of lecture per week.

1202 Environmental Biology (3), [MI, MS]

An examination of the biological basis of current environmental problems, with emphasis upon resources, energy, pollution, and conservation. Three hours of lecture per week.

1811 Introductory Biology: From Molecules to Organisms (5), [MI, MS]

Prerequisites: A minimum of high school chemistry, Engl 1100 or equivalent (may be taken concurrently), and placement into college algebra or higher. Required for students intending to major in biology or take specified biology courses at the 2000 level or above. This course presents an introduction to some of the principles of biology and scientific methodology applied to the molecular/cellular through organ system levels of organization. Topics include: cell structure, metabolism, reproduction, heredity and major physiological processes regulated by organ systems. Three hours of lecture, three and one-half hours of lab, and one hour of discussion per week.

1821 Introductory Biology: Organisms and the Environment (5), [MI, MS]

Prerequisites: A minimum of high school chemistry, Engl 1100 or equivalent (may be taken concurrently), and placement into college algebra or higher. Required for students intending to major in biology or take specified biology courses at the 2000 level or above. This course presents an introduction to some of the principles of biology and scientific methodology applied to the organismal and supraorganismal levels of biology. Topics to be covered include: ecology, evolution, diversity, and population biology. Three hours of lecture, three and one half hours of lab and one hour of discussion per week.

1850 Global Ecology (3), [V, SS, MS]

Prerequisite: None. Must be taken concurrently with Pol Sci 1850 for 3 hours of Biol credit and 3 hours of Pol Sci credit. A course team-taught by the Biology and Political Science departments, combining natural science and social science perspectives in taking a global view of a variety of environmental concerns, such as air and water pollution, climate change, energy use, use and conservation of natural resources, human population ecology and other issues. Examines the underlying scientific dimension, as well as the political-economic-social aspects of problem-solving at local, national, and international levels. Features labs and field trips in addition to lecture and discussion. This course does not count towards a major or minor in Biology.

2012 Genetics (3)

Prerequisite: Biol 1811 (majors must also take Biol 1821) and Chem 1111 or (Chem 1082 plus Chem 1091). Fundamental principles of inheritance, including classical genetic theory as well as recent advances in the molecular basis of heredity. Three hours of lecture per week.

2013 Genetics Laboratory (2)

Prerequisite: Concurrent registration in Biol 2012, or by consent of instructor. Laboratory to accompany Biol 2012. Three and one-half hours of organized laboratory time per week. Students may need to return to the laboratory at unscheduled times to complete some exercises.

2102 General Ecology (3)

Prerequisite: Biol 1811 and 1821. An examination of the relationships between living organisms and their environment. Three hours of lecture per week.

2103 General Ecology Laboratory (2)

Prerequisite: Biol 2102 required (may be taken concurrently); a general statistics course strongly recommended. Analysis of environmental factors influencing the abundance and distribution of living organisms. Some classes held at field sites in and around St. Louis. Three and one-half hours of laboratory or field work per week.

2402 Vertebrate Biology (3)

Prerequisite: Biol 1811 and 1821. Development, structure, function, interrelationships, and zoogeography of vertebrate animals with particular attention to phylogenetic aspects. Three hours of lecture per week.

2403 Vertebrate Biology Laboratory (2)

Prerequisite: Biol 2402 (may be taken concurrently). Laboratory to accompany Biol 2402. Morphological analysis and systematic survey of major vertebrate groups. Overview of the vertebrate life forms and their adaptations to habitats and resources. Three and one-half hours of laboratory per week.

2442 Invertebrate Biology (3)

Prerequisite: Biol 1811 and 1821. A general introduction to the form, function and biodiversity of animals, 95% of which lack backbones. The course focuses on the evolution and phylogenetic interrelationships of animals from single-cell protozoans to the giant squid, with an emphasis on fresh water and marine (non insect) invertebrates. Three hours of lecture per week.

2443 Invertebrate Biology Laboratory (2)

Prerequisite: Biol 2442 (may be taken concurrently). Laboratory to accompany Biol 2442. Analysis of invertebrates structure and function with emphasis on the feeding and locomotory behavior of live animals. Students will collect and study animals in habitats ranging from UMSL's Bugg Lake to the Gulf of Mexico. The course meets three and one-half hours per week and includes a one-week field trip to a marine laboratory in Florida. Students will be responsible for expenses they incur.

2482 Microbiology (3)

Prerequisite: Biol 1811 (majors must also take Biol 1821) and Chem 1111 [or Chem 1082 plus Chem 1091]. Study of microorganisms, their metabolism, genetics, and their interaction with other forms of life. Three hours of lecture per week.

2483 Microbiology Laboratory (2)

Prerequisite: Biol 2482 (may be taken concurrently). Experimental studies and procedures of microbiological techniques. Three and one-half hours of organized laboratory time per week. Students will need to return to the laboratory at unscheduled times to complete some exercises.

2501 Biology of Plants (5)

Prerequisites: Biol 1811 and 1821. A general discussion of the plant groups from algae through angiosperms. Plant morphology, physiology, reproduction, and ecology will be discussed in lecture (three hours per week). The laboratory (three and one half hours per week) involves examination of representatives of the plant kingdom and experimentation in plant physiology and genetics. Fulfills both a lecture and a laboratory requirement.

3102 Animal Behavior (3)

Prerequisite: Biol 1811 and 1821. The study of invertebrate and vertebrate behavior, including neurophysiological, hormonal, developmental, genetic, ecological and evolutionary aspects of behavior; behavior interactions within and between populations. Three hours of lecture per week.

3103 Animal Behavior Laboratory (2)

Prerequisite: Biol 3102 (may be taken concurrently) and any college level course in introductory statistics (may not be taken concurrently). Observational and experimental studies of animal behavior in the field and laboratory. Three and one-half hours of formal laboratory time per

week, but additional time may be required for independent projects. Some activities involve field trips or trips to the St. Louis Zoo.

3122 Tropical Resource Ecology (3)

Prerequisite: Biol 2102 and either Biol 3302 or 3102 or their equivalent, or consent of instructor. A lecture and seminar course that applies the behavioral ecology paradigm to the patterns of use and exploitation of resources in the tropics by humans. Students may not receive credit for both Biol 3122 and 5122. Three hours of lecture per week. Offered in odd numbered years.

3123 Tropical Resource Ecology Field Studies (2)

Prerequisite: Biol 3122 (may be taken concurrently). The field component to the lecture and seminar course. Examines the patterns of use and exploitation of resources in the tropics by humans in the context of the theories of behavioral ecology. Two weeks of intensive field research and lectures in Guyana, South America during the second and third weeks of Summer Session I (trip costs to be borne by the student). Students may not receive credit for both Biol 3123 and Biol 5123. Offered in odd numbered years.

3202 Conservation Biology (3)

Prerequisite: Biol 1811 and 1821. Introduction to the principles and theories of conservation biology. Course topics include biodiversity, extinctions, population modeling, habitat fragmentation, conservation area management, restoration ecology, and social science elements of conservation strategies. Class sessions will include lectures, discussions, and simulation exercises. Three hours of lecture per week.

3203 Conservation Biology Laboratory (2)

Prerequisites: Biol 3202 (recommended to be taken concurrently). Laboratory to accompany Biol 3202. Laboratory will include computer simulations of conservation problems using existing software, 2-3 field trips to local conservation projects, and field interviews with governmental and non-governmental agencies. Three and one-half hours of laboratory per week.

3302 Introduction to Evolution (3)

Prerequisite: Biol 1811 and 1821; Biol 2012 strongly recommended. Introduction to the theory, events, and processes of organic evolution.

3622 Cell Biology (3)

Prerequisite: Biol 1811 (majors must also take Biol 1821), Chem 1111, 1121 and 2612 or equivalents. Examination of the basic biological processes of cells.

3642 Developmental Biology (3)

Prerequisites: Biol 1811 and 1821. Basic principles of developmental biology, with an emphasis on the underlying cellular and molecular mechanisms.

3643 Developmental Biology Laboratory (2)

Prerequisite: Biol 3642 (recommended to be taken concurrently). Laboratory to accompany Biol 3642. Three and one-half hours of laboratory per week.

3699 Undergraduate Internship in Biotechnology (1-4)

Prerequisite: Biol 1811 and 1821, Chem 1111 and 1121 and consent of instructor. Concurrent enrollment in Chem 2612 or higher is strongly encouraged. A 2.5 GPA and enrollment in the undergraduate Biotechnology Certificate Program is required. Internship will consist of a period of observation, experimentation and on-the-job training in a biotechnology laboratory. The laboratory may be industrial or academic. Credit will be determined by the number of hours a student works each week and in consultation between the intern's supervisor and instructor. Two credits may be used to fulfill the lab requirement.

3802 Vertebrate Physiology (3)

Prerequisite: Biol 1811 and 1821 and Chem 1111 or Chem 1082 plus Chem 1091. Basic functional aspects of organ systems in relation to the physiochemical properties of protoplasm. Three hours of lecture per week.

3803 Vertebrate Physiology Lab (2)

Prerequisite: Biol 3802 (may be taken concurrently). Instrumental and experimental studies in physiology. Three and one-half hours of laboratory per week.

3920 Special Topics in Biology (1-5)

Prerequisites: Biol 1811 and 1821, junior standing, and consent of instructor or curriculum committee. Topics will vary each semester. Topics are available from the biology department office. This course may be used to satisfy requirements for elective biology courses for the B.A. or B.S. degree in biology; it cannot be substituted for core courses required for all majors. Credit arranged. May be taken up to two times for credit.

4102 Behavioral Ecology (3)

Prerequisite: Biol 3102; Biol 2102 recommended. Topics in animal behavior with an emphasis on ecological and evolutionary aspects of behavior. Topics may include the role of behavior in population regulation, habitat selection and spacing, feeding and predator-prey interactions, sexual selection, evolution of mating systems, and new approaches to animal communication. Three hours of lecture per week. Students may not receive credit for both Biol 4102 and 6102.

4112 Evolution of Animal Sociality (3)

Prerequisite: Biol 3102 or consent of instructor, Biol 2102 or 4182 recommended. The evolution of sociality, including a critical examination of sociobiological theories and alternative approaches to social evolution. Survey of social organization and behavior in arthropods, with an emphasis on social insects, and vertebrates. Two hours of lecture, one hour of discussion per week. Students may not receive credit for both Biol 4112 and 6112.

4122 Biometry (3)

Prerequisite: Math 1030 and a minimum of 15 hours in biology. Reviews descriptive, analytical, and experimental methods useful for the statistical study of biological phenomena. Students will develop the skills needed to better appreciate and evaluate the published literature, as well as the ability to design their own research programs. Topics include: the collection and summarization of biological observations; development, design, and testing of hypotheses; analysis and presentation of data. Three hours of lecture per week. Fulfills the statistics requirement for the B.A. or B.S. degree in biology.

4162 Evolutionary Ecology (3)

Prerequisites: Biol 3302 and 4182, or equivalent, or consent of instructor. The course will explore the use of evolutionary theory to interpret life-history adaptations of organisms, family and social interactions, coevolution, and macroevolution. Topics will include the evolution of sex, sexual selection, aging, parent-offspring conflict, evolution of pathogen virulence, artificial selection, and genetic modification of organisms. Students will also analyze data sets using computer software to highlight the application of game theory approaches and phylogenetically based comparative analysis to interpret patterns in nature. Three hours of lecture per week. Students may not receive credit for both Biol 4162 and 6162.

4182 Population Biology (3)

Prerequisite: Biol 2102 and 2012 (Biol 3302 recommended). Introduces concepts and mathematical models of population ecology and population genetics. By integrating the ecology and genetics of populations, the course goal is to understand the processes that contribute to microevolution of populations. Topics include demography, metapopulation biology, natural selection, migration, gene flow, and genetic drift. Three hours of lecture per week. Students may not receive credit for both Biol 4182 and 6182.

4202 Wildlife Ecology and Conservation (3)

Prerequisite: Biol 2102, and junior standing. This course will provide a basic survey of the ecological issues involved in conservation and management of wild animals. Topics will include population dynamics and regulation, habitat management, endangered species, wildlife legislation, predator-prey interactions, human-wildlife conflicts, sustainable use of wildlife. There will be a strong emphasis on temperate ecosystems, but many examples will be drawn from tropical ecosystems. Use of computer simulation models in wildlife conservation and management will be included. Three hours of lecture per week.

4203 Wildlife Ecology and Conservation Laboratory (2)

Prerequisite: Biol 4202 (may be taken concurrently) or consent of instructor. This course will provide field and laboratory experiences to accompany Biol 4202. Field trips

will emphasize field research techniques, including methods for sampling animal populations and their habitat. Considerable emphasis will be placed on learning to identify common vertebrates of Missouri streams and forests. Laboratory periods will be used to discuss methods of data analysis, computer simulations, as well as further emphasis on identification. Three and one-half hours of lab per week. Several one- to two-day field trips will be required as well.

4222 Tropical Ecology and Conservation (3)

Prerequisite: Biol 2102, 4182, 5192, or equivalent. This course will cover research areas in tropical population, community and ecosystems ecology, with emphasis on interspecies and environment-organism interactions, population control factors, and genetic structure of populations. Topics include the current status and causes of tropical habitat destruction, ongoing attempts to manage those habitats, and development of strategies leading to sustained use of nonrenewable resources. Students may not receive credit for both Biol 4222 and 6222. Three hours of lecture per week.

4245 Field Biology (3)

Prerequisite: Three biology courses and consent of instructor. Intensive study of the flora and fauna of selected natural areas of North America, including an extended field trip. Details of the field trip and course schedule will be posted in the Biology Department preceding registration for the term in which the course will be offered. Students will be required to pay costs of travel and of the field trip. This is a laboratory course appropriate for advanced undergraduates and non-thesis Master of Science students. Students may not receive credit for both Biol 4245 and 6245.

4299 Practicum in Conservation (2)

Prerequisite: Biol 3202 or consent of instructor. This course is generally restricted to students officially enrolled in the Certificate Program in Conservation Biology. The course provides practical experience with conservation or environmental agencies. Specific placement will be selected according to student's interests and career goals as well as availability of agency openings. Course requirements include practical experience and final report on practicum experience.

4382 Introduction to Marine Science (3)

Prerequisite: Consent of the instructor; Biol 2442 and 2443 recommended. A multidisciplinary study of the ocean environment. Topics to include the geology of ocean basins, atmospheric and astronomic effects on the motion of water, chemical and physical properties of sea water, and the adaptations and diversity of marine organisms to their environment. Topics will include the ecology of various benthic and pelagic marine communities and human impact on the world's oceans. Offered in Winter Semester only.

4383 Introduction to Marine Science Laboratory (!)

Prerequisite: Biol 4382, consent of instructor. An intensive laboratory and field study of selected North American marine communities. Based on a two-week field trip to Florida and offered during the Summer Session I, following the lecture course Biol 4382 of the preceding winter semester. Students must pay their own travel and living expenses.

4402 Ornithology (3)

Prerequisite: Biol 2102 and junior standing. Introduction to avian biology and ecology. Material to be covered will include basic adaptations of anatomy, physiology, and behavior of birds. There will be a strong emphasis on avian ecology and conservation. Specific topics will include: flight, reproductive behavior, migration, foraging behavior, community structure, and current conservation concerns. The diversity of birds will be emphasized through comparisons between temperate and tropical regions. Three hours of lecture per week

4403 Ornithology Laboratory (2)

Prerequisite: Biol 4402 (may be taken concurrently) or consent of instructor. This course will introduce students to methods of identifying and studying birds. Labs will almost entirely be comprised of field trips to local areas and will emphasize diversity of birds, adaptations shown by different groups, and means of identification, particularly of birds found in Missouri. Field projects will focus on techniques for censusing birds, sampling foraging behavior, and studying habitat selection. Indoor periods will cover internal and external anatomy of birds. Slides and field trips to the St. Louis Zoo will be used to survey the diversity of birds worldwide. Three and one-half hours of laboratory per week. Longer (e.g., Saturday) field trips will be made when appropriate.

4422 Entomology (3)

Prerequisite: Biol 1811 and 1821; 9 additional hours of biology, and upper-division standing. Development, structure, function, behavior and ecology of insects, including a systematic survey of the orders of Insecta. Three hours of lecture per week.

4423 Entomology Laboratory (2)

Prerequisite: Biol 4422 (may be taken concurrently). Laboratory to accompany Biol 4422. Studies of the morphology, physiology, and behavior of insects to give a sampling of biological studies of the class Insecta. Formation of a collection of insects, comprising a systematic survey of orders and principal families, will be an integral part of the course and will require additional time beyond the official lab hours. Three and one-half hours of lab per week.

4482 Parasitology (3)

Prerequisite: Biol 1811, 1821, and 10 additional hours of biology and upper-division standing. Biol 3622 strongly recommended. A broadly based course emphasizing the

phylogeny, life history, ecology, and physiology of parasites of medical and veterinary importance. Modern aspects of experimental parasitology, immunoparasitology, and parasite molecular biology will be addressed.

4501 Flowering Plant Families: Phylogeny and Diversification (5)

Prerequisites: Biol 1811, 1821 and junior standing or consent of instructor. Focusing on the flowering plant families of North America, the aim of the course is to give an understanding of their phylogeny and diversification. Student will also gain an understanding of plant morphology and anatomy, a basis for further developing their knowledge of plants. Three hours of lecture and three to four hours of laboratory per week. Students may need to return to the laboratory at unscheduled times.

4532 Sex and Evolution in the Flowering Plants (3)

Prerequisites: Biol 1811 or 1821 or equivalent; Biol 3302 or 2501 recommended. The evolution of flowers, and flowering plants, is the result of mutualistic plant-animal interactions. This course explores all aspects of the function of flowers, integrating findings and approaches from ecology, systematics, plant physiology, and animal behavior. flower color, scent, and nectar, deceptive pollination systems, pollen-stigma interactions and incompatibility systems, flowering plant mating systems (including selfing and apomixis), and pollination by insects, vertebrates, wind, and water. Two hours of lecture per week and one hour of laboratory per week to be arranged. Does not fulfill a laboratory requirement for biology majors.

4550 Bacterial Pathogenesis (3)

Prerequisites: Biol 2482, Biol 2012. Examination of the strategies bacterial pathogens use to infect animals. Topics include host immune responses to infection, bacterial virulence factors, regulation of bacterial virulence, and the cellular and molecular approaches used to study host-parasite interactions. Three hours of lecture per week. Students may not receive credit for both Biol 6550 and Biol 4550.

4552 Evolution and Phylogeny of Seed Plants (3)

Prerequisites: Biol 3302 or 2501 or equivalent. Examination of the evolution of, and relationships among, major lines of seed-bearing plants, both extinct (Bennettitales, Cordaites, etc.) and extant (conifers, cycads, ginkgo, Gnetales, and flowering plants). Criteria for the assessment or morphological homology are examined, and wherever possible the evolution of morphological structures is related to their function. Includes introduction to cladistic methods and practical exercises in the analysis of large morphological data matrices using PAUP & MacClade. Two hours of lecture per week and one hour of laboratory per week to be arranged. Does not fulfill a laboratory requirement for biology majors. Students may not receive credit for both Biol 4552 and Biol 6552.

4602 Molecular Biology (3)

Prerequisite: Biol 2012 and 4712. A study of the principles of molecular biology, with emphasis on understanding the genetic regulation of DNA, RNA, and protein synthesis and function in the eukaryotic cells. Three hours of lecture per week. Students may not receive credit for both Biol 4602 and Biol 6602.

4612 Molecular Genetics of Bacteria (3)

Prerequisite: Biol 2482 and Biol 2012. A study of the molecular biology of gene replication, transfer, and expression in bacterial cells. Topics include DNA replication, transcription and translation, mutagenesis, DNA repair and recombination, gene transfer, and the regulation of genes and global expression systems. Three hours of lecture per week. Students may not receive credit for both Biol 4612 and Biol 6612.

4614 Biotechnology Laboratory I (4)

Prerequisite: Biol 2012 or consent of instructor. An introduction to the fundamental concepts that underlie the field of biotechnology. Both the basic principles of molecular biology and hands-on experience with the techniques of the field will be addressed through lectures, discussions, and a series of laboratory exercises. Two hours of lecture and four hours of laboratory per week. Fulfills a laboratory requirement only; may not be used to fulfill the 4000 level or above lecture course requirement for the B.A. or B. S. degree in biology. Students may not receive credit for Biol 4614 and a comparable biotechnology course from another institution.

4615 Biotechnology Laboratory II (4)

Prerequisite: Biol 4614 and either Biol 4602 or Biol 4612, or consent of instructor. An in-depth look at theory and practice of biotechnology. Lectures and discussion will examine the underlying principles, and laboratory exercises will present hands-on experience with current techniques. One hour of lecture and six hours of laboratory per week. Fulfills a laboratory requirement only; may not be used to fulfill the 4000 level lecture course requirement for the B.A. or B.S. degree in biology. Students may not receive credit for both Biol 4615 and Biol 6615.

4622 Molecular Cell Biology (3)

Prerequisites: Biol 4602, Biol 3622, and Biol 4712 or consent of instructor. A study of the structural organization and processes of eukaryotic cells. Topics of discussion will include regulation of transcription, gene product processing and transport, organelle biogenesis and function, cytoskeletal structure and function, and cell interactions. Three hours of lecture per week. Students may not receive credit for both Biol 4622 and Biol 6622.

4632 Nucleic Acid Structure and Function (3)

Prerequisite: Biol 2012 and 4712 or equivalent or consent of instructor. Comprehensive view of structural properties of DNA and RNA that promote molecular interactions and

biological function. Topics include physical properties of nucleic acids, formation and biological importance of higher order structures, RNA enzymatic activities, nucleic acid-protein interactions, and RNA metabolism. Three hours of lecture per week. Students may not receive credit for both Biol 4632 and 6632.

4642 Plant Molecular Biology and Genetic Engineering (3)

Prerequisite: Biol 4602 or 4612. Topics will include plant cell and developmental biology, DNA transfer into plants, using mutations to identify genes and their functions, regeneration of plants in tissue culture, signal transduction mechanisms, molecular biology of plant organelles, developmental engineering, metabolic engineering, plant-microbe interactions, and engineered resistance to pathogen attack. Three hours of lecture per week. Students may not receive credit for both Biol 4642 and 6642.

4652 Virology (3)

Prerequisite: Biol 2482 and 2012. A comparative study of the structure, reproduction, and genetics of viruses. Three hours of lecture per week. Students may not receive credit for both Biol 4652 and 6652.

4712 Biochemistry (3)

Same as Chem 4712. Prerequisite: Chem 2612 and either Biol 1811 or Chem 2622. Examines the chemistry and function of cell constituents, and the interaction and conversions of intracellular substances. Students may not receive credit for both Biol 4712 and Chem 4712.

4713 Techniques in Biochemistry (2)

Prerequisite: Biol 4712 or Chem 4712 (may be taken concurrently). Laboratory activities introducing fundamental qualitative and quantitative biochemical techniques. Student evaluation will be based on laboratory participation, student laboratory reports, and written examinations. Three and one-half hours of organized laboratory time per week. Students may need to return to the laboratory at unscheduled times to complete some experiments.

4822 Introduction to Neuroscience (3)

Prerequisite: Biol 3802 or consent of instructor. The study of nervous systems, featuring the cellular bases of initiation and conduction of the impulse, synaptic transmission, and the network integrative function of invertebrate and vertebrate nervous systems. This course emphasizes the multidisciplinary nature of the neurosciences, including anatomical, physiological and molecular approaches to understanding neural function. Three hours of lecture per week.

4842 Immunobiology (3)

Prerequisite: Biol 4712 and Chem 2612. The fundamental principles and concepts of immunology and immunochemistry. Emphasis on the relation of

immunological phenomena to biological phenomena and biological problems. Three hours of lecture per week.

4889 Senior Seminar (2)

Prerequisite: Senior standing. Required of biology majors. Oral and written presentation by students of selected scientific papers or articles. Students are expected to participate in discussions of oral presentations by other students. May not be taken for graduate credit.

4905 Research (1-3)

Prerequisite: Consent of faculty research advisor; generally restricted to junior and senior standing. Research in an area selected by the student in consultation with and under the supervision of a faculty research advisor. Research opportunities are subject to availability. The project normally includes the reading of pertinent literature, laboratory or field experience, and a summary paper. Credit arranged. Course may be repeated for a total of up to 5 credit hours. Any combination of 2 credit hours may be used to meet one laboratory course requirement. No more than 2 credit hours may be applied toward the minimum number of biology course credits for the major in biology.

4920 Selected Topics (1-10)

Prerequisite: Junior standing and consent of instructor. Selected topics in biology. The topics will vary each semester. Topics available in the department office. Credit arranged. May be taken more than once for credit.

4980 Science in the Real World: Microbes in Action (2)

Prerequisites: Biol 1811 or Chem 1111 or equivalent course, and experience teaching science at the middle school or high school level. A hands-on workshop in microbiology designed for secondary school science teachers interested in introducing microbiology to their students. Includes lectures on basic microbiology, laboratory exercises in microbiology for middle school or high school classroom, discussion sessions, and a session in the computer lab to familiarize teachers with microbiology resources on the Web. Open only to middle school and high school science teachers. Does not count as credit toward degree in biology.

4985 Curriculum and Methods of Teaching Life Sciences (4)

Same as Sec Ed 4985. Prerequisite: Tch Ed 3310 and a near-major in biology. A study of the scope and sequence of the life science courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. The analysis of teaching/learning and field experience observations in secondary school classrooms will be integrated into classroom activities and discussions. This course must be completed in residence.

4986 Laboratory in Teaching Life Sciences (2)

Same as SecEd 4986. Prerequisite: Tch Ed 3310. Discussion, development, utilization, and evaluation of equipment, materials, and techniques applicable to instruction in the life sciences. Must be taken concurrently with Biol 4985, SecEd 4985.

4999 Biology Teaching Seminar (3)

Same as Sec Ed 4999. Prerequisite: Biol 4985 and 4986. The application of educational philosophy, science curriculum, teaching strategies, and instructional technology in the classroom setting. Offered concurrently with Secondary School Student Teaching Sec Ed 4990. Not available for graduate credit.

5059 Topics in Ecology, Evolution, and Systematics (1)

Prerequisite: Graduate standing. Presentation and discussion of faculty and student current research projects in behavior, ecology, evolution, and systematics. May be repeated.

5069 Topics in Cellular and Molecular Biology (1)

Prerequisite: Graduate standing. Presentation and discussion of student and faculty research projects and/or current research articles in molecular, cellular and developmental biology. May be repeated.

5079 Topics in Floristic Taxonomy (1)

Prerequisite: Biol 2501 or equivalent, and graduate standing. Seminar course in systematics of higher plants, arranged in the Cronquist sequence of families, covering morphology, anatomy, palynology, biogeography, chemosystematics, cytology, and other aspects of plant classification and phylogenetics. Given at the Missouri Botanical garden. One hour per week.

5122 Advanced Tropical Resource Ecology (3)

Prerequisite: Biol 2102, and either Biol 3302 or Biol 3102 or their equivalent, or consent of the instructor. A lecture and seminar course that applies the behavioral ecology paradigm to the patterns of use and exploitation of resources in the tropics by humans. Students may not receive credit for both Biol 3122 and Biol 5122. Three hours of lecture, and one hour of discussion or seminar per week. Offered in odd numbered years.

5123 Advanced Tropical Resource Ecology Field Studies (2)

Prerequisite: Biol 5122 (may be taken concurrently). The field component to the lecture and seminar course. Examines the patterns of use and exploitation of resources in the tropics by humans in the context of the theories of behavioral ecology. Two weeks of intensive field research and lectures in Guyana, South America during the second and third weeks of Summer Session I (trip costs to be borne by student). Students may not receive credit for both Biol 5123 and Biol 3123. Offered in odd numbered years.

5192 Community Ecology (3)

Prerequisite: Graduate standing and either Biol 2102 and 4182 or an equivalent course. Studies of structure and organization of natural communities stressing the abundance and distribution of species, the regulation of species diversity, and the evolution of demographic parameters in populations. Three hours of lectures per week.

5312 Theory of Systematics (3)

Prerequisites: Biol 1811 and 1821 and at least one course beyond introductory level dealing with animal, plant, or microbial diversity (such as Biol 2482, 2501, 2402, 4482, 4501, 4402, or 4422) or consent of instructor. Investigates theory of classification, phylogenetic analysis, systematic biology, and their relation to systematic practice. Covers goals and schools of systematics, characters, and homology, analysis of molecular and morphological data and underlying assumptions, species concepts, classification, naming, and connections between evolutionary biology and systematics. Appropriate for upper-level undergraduates and graduate students in all disciplines, animal, plant, and microbial, as introduction to systematic methods. Three hours of lecture per week.

5314 Herbarium Taxonomy (2)

Prerequisites: Bio 5312. An introduction to the principles and practice of herbarium taxonomy, emphasizing species description, identification, how to access and use the taxonomic literature, data basing, nomenclature, curation, and collecting and the national and international regulations governing it. Two hours of lectures per week, projects including specimen curation, writing species description, etc., to be arranged. Offered every even year.

5842 Advanced Immunology (3)

Prerequisite: Biol 4842. Advanced consideration of techniques of measuring antigen-antibody interaction; immunogenetics as applied to cellular immunity and transplantation; evolution of the immune response. Three hours of lecture per week.

5985 Problems in Teaching College Biology (3)

Same as Adu Ed 6435. Prerequisite: Teaching experience, 30 semester hours in biology, and consent of instructor. Basic philosophies underlying undergraduate biology education at the college level will be presented and examined with concern for establishment of an individual philosophy in the prospective college teacher. Teaching techniques suitable for college-level instruction will be considered, practiced, and evaluated. Advantages and limitations of various methods of instruction will be considered with respect to current research findings.

5986 Techniques in Teaching College Biology for Graduate Students (2)

Same as Sec Ed 6986. Prerequisite: Graduate standing and teaching assignment. Discussion and practice of techniques specific to instruction in the life sciences. Consideration

will be given to teaching strategies, curriculum design, evaluation, instrumentation, and student-teacher interaction. Recommended for all graduate students with teaching assistantships.

6102 Advanced Behavioral Ecology (3)

Prerequisite: Biol 3102 (Biol 2102 recommended). Topics in animal behavior with an emphasis on ecological and evolutionary aspects of behavior. Topics may include the role of behavior in population regulation, habitat selection and spacing, feeding and predator-prey interactions, sexual selection, evolution of mating systems, and new approaches to animal communication. Three hours of lecture, one hour discussion or seminar per week. Students may not receive credit for both Biol 4102 and 6102.

6112 Advanced Evolution of Animal Sociality (3)

Prerequisite: Biol 2102, or 4182 recommended or consent of instructor. The evolution of sociality, including a critical examination of sociobiological theories and alternative approaches of social evolution. Survey of social organization and behavior in arthropods, with an emphasis on social insects, and vertebrates. Two hours of lecture and one hour of discussion per week. Students may not receive credit for both Biol 4112 and Biol 6112.

6162 Advanced Evolutionary Ecology (3)

Prerequisites: Biol 3302 and 4182, or equivalent, or consent of instructor. The course will explore the use of evolutionary theory to interpret life-history adaptations of organisms, family and social interactions, coevolution, and macroevolution. Topics will include the evolution of sex, sexual selection, aging, parent-offspring conflict, evolution of pathogen virulence, artificial selection, and genetic modification of organisms. Students will also analyze data sets using computer software to highlight the application of game theory approaches and phylogenetically based comparative analysis to interpret patterns in nature. Graduate students will write a paper on a topic relevant to the course. Three hours of lecture per week. Students may not receive credit for both Biol 4162 and 6162.

6182 Advanced Population Biology (3)

Prerequisites: Biol 2102 and 2012, (Biol 3302 recommended). Introduces concepts and mathematical models of population ecology and population genetics. By integrating the ecology and genetics of populations, the course goal is to understand the processes that contribute to microevolution of populations. Topics include: demography, metapopulation biology, natural selection, migration, gene flow, and genetic drift. A discussion section will focus on mathematical elements of population biology models. Three hours of lecture, and one hour of discussion per week. Students may not receive credit for both Biol 4182 and 6182.

6192 Applications of Geographic Information Systems (5)

Prerequisite: Biol 2102, Biol 4122 or equivalent, and consent of instructor. Geographic Information Systems (GIS) are sophisticated computer-based systems for analysis, capture, presentation, and maintenance of geographically referenced data. This course provides a foundation in using GIS for a spatial analysis. Although biological examples are primarily used, examples from a range of disciplines are employed to emphasize the use of GIS as a tool to support analysis and decision-making. Students will have hands-on use of GIS software using Windows 2000/NT-based workstations during each session. An independent research project applying the spatial analysis tools learned in GIS to biological research will be required. Five hours of combined lecture and computer operations, plus 2-3 hours of open lab per week.

6212 Theory and Application of Conservation Biology (3)

Prerequisite: Biol 4182, 5192, or equivalent; or consent of instructor. Prerequisites may be taken concurrently. Advanced analysis of conservation theory with emphasis on conservation of populations, their genetic diversity, and the biodiversity of habitats. Applied aspects of conservation and sustainable development will be illustrated through case studies presented by conservation professionals.

6222 Advanced Tropical Ecology and Conservation (3)

Prerequisite: Biol 2102, or 4182, or 5192, or their equivalent. This course will cover research areas in tropical population, community and ecosystem ecology, with emphasis on interspecies and environment-organism interactions, population control factors, and genetic structure of populations. Topics include the current status and causes of tropical habitat destruction, ongoing attempts to manage those habitats, and developments of strategies leading to sustained use of nonrenewable resources. A research proposal designed to investigate current topic in tropical ecology will be required. Students may not receive credit for both Biol 4222 and 6222. Three hours of lecture per week.

6245 Ecological Research in Temperate Zones (3)

Prerequisite: Graduate standing and consent of instructor. This course will visit several temperate ecosystems with the objectives of learning about the natural history of these areas together with learning how to design projects and conduct field research addressing current ecological theories in a temperate setting. Several faculty members will participate in this course. Temperate sites to be visited will likely include Missouri Ozarks, Great Smokey Mountains, Indiana dunes, and Southern Illinois bottomland and cypress swamp forest. Students will be required to pay costs of travel and of field trips. Students may not receive credit for both Biol 4245 and 6245. Two hours of discussion (during weekday), four-six weekend field trips (leave Friday, return Sunday), and several (2-4)

Saturday field trips during the first eight weeks of semester.

6250 Public Policy of Conservation and Sustainable Development (3)

Same as Pol Sci 6452. Prerequisite: graduate standing in Biology or Political Science and consent of instructor. Prior course in ecology recommended. This course will introduce the student to concepts and techniques for formulating, implementing, and analyzing public policy with an emphasis on environmental concerns, conservation, and sustainable development. The course will be team-taught by a political scientist and a biologist. Course materials will include case studies that demonstrate the special problems of the environmental policy-making in developing and developed economics.

6299 Internship in Conservation Biology (1-4)

Prerequisite: Biol 6250 or 6212 and consent of the director of graduate studies in Biology. Internships will consist of a period of study, observation, and on-the-job training at a conservation or environmental agency. Specific placements will be selected according to student's interests and career goals. Internships may vary from 2 weeks to 4 months in duration.

6550 Advanced Bacterial Pathogenesis (3)

Prerequisites: Biol 2482 and Biol 2012. Examination of the strategies bacterial pathogens use to infect animals. Topics include host immune responses to infection, bacterial virulence factors, regulation of bacterial virulence, and the cellular and molecular approaches used to study host-parasite interactions. Students may not receive credit for both Biol 6550 and Biol 4550. Students will be required to give an oral presentation and/or write an extra paper on a topic relevant to the course. Three hours of lecture per week.

6552 Advanced Evolution and Phylogeny of Seed Plants (3)

Prerequisites: Biol 3302 or 2501, or equivalent. Advanced approaches in examination of the evolution of, and relationships among, major lines of seed-bearing plants, both extinct (Bennettitales, cordaites, etc.) and extant (conifers, cycads, ginkgo, Gnetales, and flowering plants). Criteria for the assessment of morphological homology are examined, and wherever possible the evolution of morphological structures is related to their function. Includes use of cladistic methods and practical exercises in the analysis of large morphological data matrices using PAUP & MacClade. Two hours of lecture per week and one hour of laboratory per week to be arranged. Does not fulfill a laboratory requirement for biology majors. Students may not receive credit for both Biol 4552 and Biol 6552.

6602 Advanced Molecular Biology (3)

Prerequisite: Biol 2012 and 4712, or consent of instructor. A study of the principles of molecular biology, with

emphasis on understanding the genetic regulation of DNA, RNA, and protein synthesis and function in eukaryotic cell. Three hours of lecture per week. Students will be required to give an oral presentation and/or write an extra paper on a topic relevant to the course. Students may not receive credit for both Biol 6602 and Biol 4602.

6612 Advanced Molecular Genetics of Bacteria (3)

Prerequisite: Biol 2012 and 2482. A study of the molecular biology of gene replication, transfer, and expression in bacterial cells. Topics include DNA replication, transcription and translation, mutagenesis, DNA repair and recombination, gene transfer, and the regulation of genes and global expression systems. Three hours of lecture per week. Students will be required to give an oral presentation and/or write an extra paper on a topic relevant to the course. Student may not receive credit for both Biol 6612 and Biol 4612.

6615 Advanced Biotechnology Laboratory II (4)

Prerequisite: Biol 4614 and either Biol 4602 or Biol 4612, or consent of instructor. An in-depth look at the theory and practice of biotechnology. Lectures and discussion will examine the underlying principles, and laboratory exercises will present hands-on experience with current techniques. One hour of lecture and six hours of laboratory per week. Students will be required to give an oral presentation and/or write an extra paper on a topic relevant to the course. Students may not receive credit for both Biol 6615 and Biol 4615.

6622 Advanced Molecular Cell Biology (3)

Prerequisite: Biol 4602, Biol 3622, and Biol 4712, or consent of instructor. A study of structural organization and processes of eukaryotic cells. Topics of discussion will include regulation of transcription, gene product processing and transport, organelle biogenesis and function, cytoskeletal structure and function, and cell interactions. Three hours of lecture per week. Students will be required to give an oral presentation and/or write an extra paper on a topic relevant to the course. Students may not receive credit for both Biol 6622 and Biol 4622.

6632 Advanced Nucleic Acid Structure and Function (3)

Prerequisites: Biol 2012 and 4712 or equivalent or consent of instructor. Comprehensive view of structural properties of DNA and RNA that promote molecular interactions and biological function. Topics include physical properties of nucleic acids, formation and biological importance of higher order structures, RNA enzymatic activities, nucleic acid-protein interactions, and RNA metabolism. Three hours of lecture and one hour of discussion per week. Students may not receive credit for both Biol 4632 and 6632.

6642 Advanced Plant Molecular Biology and Genetic Engineering (3)

Prerequisite: Biol 4602 or 4612. Topics will include plant cell and developmental biology, DNA transfer into plants, using mutations to identify genes and their functions, regeneration of plants in tissue culture, signal transduction mechanisms, molecular biology of plant organelles, developmental engineering, metabolic engineering, plant microbe interactions, and engineered resistance to pathogen attack. Three hours of lecture and one hour of seminar per week. Student may not receive credit for both Biol 4642 and Biol 6642.

6652 Advanced Virology (3)

Prerequisite: Biol 2482 and 2012. An advanced comparative study of the structure, reproduction, and genetics of viruses. Three hours of lecture, one hour of discussion or seminar per week. Students may not receive credit for both Biol 4652 and 6652.

6699 Graduate Internship in Biotechnology (1-4)

Prerequisite: Graduate standing and enrollment in graduate Biotechnology Certificate Program. Six credit hours maximum (maximum of eight combined credit hours of Biol 6905 and internship). Internship will consist of period of observation, experimentation and on-the-job training in a biotechnology laboratory. The laboratory may be industrial or academic. Credit will be determined by the number of hours the student works each week and in consultation between the intern's supervisor and the instructor. Internship assignments will be commensurate with the education and experience of the student.

6889 Graduate Seminar (2)

Presentation and discussion of various research problems in biology. Graduate student exposure to the seminar process.

6905 Graduate Research in Biology (1-10)

Research in area selected by student in consultation with faculty members.

6915 Graduate Research Practicum (1-2)

Prerequisite: Consent of instructor. This course is designed for graduate students wishing to pursue research experience in an area outside their dissertation topic. The project can be techniques-oriented or focused on a specific research question. The credit hours will depend on the time commitment to the project as decided by the supervisory faculty members.

6920 Topics in Biology (2-5)

In-depth studies of selected topics in contemporary biology. May be repeated.

Department of Chemistry and Biochemistry

Faculty

Christopher D. Spilling, Professor*, Chairperson
Ph.D., The University of Technology, Loughborough, UK

Lawrence Barton, Professor*
Ph.D., University of Liverpool

James S. Chickos, Professor*
Ph.D., Cornell University

Joyce Y. Corey, Professor*, Director of
Graduate Studies
Ph.D., University of Wisconsin

Wesley R. Harris, Professor*
Ph.D., Texas A. and M. University

David W. Larsen, Professor Emeritus*
Ph.D., Northwestern University

Robert W. Murray, Curators' Professor Emeritus*
Ph.D., Yale University

James J. O'Brien, Professor*
Ph.D., Australian National University

Valerian T. D'Souza, Associate Professor*
Ph.D., University of Detroit

Cynthia M. Dupureur*, Associate Professor,
Ph.D., Ohio State University

David L. Garin, Associate Professor Emeritus*
Ph.D., Iowa State University

Harold H. Harris, Associate Professor*
Ph.D., Michigan State University

Jane A. Miller, Associate Professor Emerita*
Ph.D., Tulane University

Keith J. Stine, Associate Professor*
Ph.D., Massachusetts Institute of Technology

Rudolph E. K. Winter, Associate Professor Emeritus*;
Ph.D., The Johns Hopkins University

Zhi Xu, Associate Professor*
Ph.D., University of Pittsburgh

Bauer, Eike, Assistant Professor
Ph.D., University of Erlangen-Nuremberg, Germany

Alexei V. Demchenko, Assistant Professor*,
Ph.D., Zelinsky Institute for Organic Chemistry, Moscow

Michael R. Nichols, Assistant Professor
Ph.D., Purdue University

Janet B. Wilking, Assistant Professor*
Ph.D., Washington University

Chung F. Wong, Assistant Professor
Ph.D., University of Chicago

James Bashkin, Research Associate Professor
Oxford University, UK

Joseph D. Dence, Adjunct Associate Professor
Ph.D. California Institute of Technology

Rensheng Luo, Research Assistant Professor
Ph.D., Wahan Institute of Physics and Mathematics
Chinese Academy of Sciences

Anthony Mannino, Adjunct Associate Professor
Ph.D., Ohio State University

Nigam P. Rath, Research Professor
Ph.D., Oklahoma State University

George Gokel, Distinguished Professor
Ph.D., University of Southern California

John Gutweiler, Lecturer
Ph.D., Saint Louis University

Technical Staff

Kenneth Owens, Glassblower

Joseph Kramer, Spectrometrist

Mark Regina, Electronics Technician

Donna Kramer, Coordinator, Laboratory Operations

Frank L. May, Research Investigator

Norman Windsor, Senior Electronics Technician

*members of Graduate Faculty

General Information

Degrees and Areas of Concentration

The Department of Chemistry and Biochemistry offers courses leading to the following baccalaureate degrees:

B.A. in Chemistry

B.A. in Chemistry with a Biochemistry Certificate

B.S. in Chemistry (with a Chemistry or Biochemistry Option)

B.S. in Education with an emphasis in Chemistry (in cooperation with the College of Education)

B.A. in Chemistry with teacher certification.

The department is accredited by the American Chemical Society. Students completing the B.S. degree (chemistry or biochemistry option) are certified to the American Chemical Society. The B.S. degree is the professional degree in chemistry, and students who earn the B.S. degree are well prepared for a career in the chemical industry or for graduate work in chemistry. The department provides opportunities for undergraduates to become involved in ongoing research projects and to participate in departmental teaching activities.

The department also offers graduate work leading to the M.S. or Ph.D. degree in chemistry with most graduate courses being scheduled in the evening. A student may earn a M.S. degree with or without a thesis. The non-thesis option provides a convenient way for students who are employed full-time to earn an advanced degree. Research leading to a M.S. thesis or Ph.D. dissertation may be conducted in one of four emphasis areas, namely, inorganic chemistry, organic chemistry, physical chemistry, or biochemistry. The nature of the graduate program allows each student to receive individualized attention from his/her research mentor, and to develop hands-on experience with major instrumentation in the department.

Fellowships and Scholarships

The following scholarships, fellowships and awards are available to chemistry majors:

William and Erma Cooke Chemistry Scholarships are given annually to outstanding full-time chemistry majors who are at least sophomores and have financial need.

The Lawrence Barton Scholarship is given annually to a chemistry major who is enrolled in at least 9 credit hours per semester. Preference is given to juniors and to first generation college students, and to students who demonstrate financial need.

The Barbara Willis Brown Scholarship for Women in Chemistry is given to a female student over the age of 24, who is a chemistry major and has completed at least 60 credit hours. The student is expected to work with a faculty member on an undergraduate research project.

The Eric G. Brunngraber Memorial Scholarship is given to a chemistry major based on GPA, statement of research interests, and performance in completed course work.

Aid to Education Scholarships are given to junior or senior chemistry majors annually. The awardees are selected by the faculty on the basis of merit.

The M. Thomas Jones Fellowship is given each semester to the graduate student who is deemed by his/her peers to have presented the best research seminar.

The Graduate Research Accomplishment Prize is given annually. The recipient is chosen based on his/her publications, presentations at professional meetings, and seminars given at UMSL.

Alumni Graduate Research Fellowships are available for summer study for selected chemistry graduate students. Several undergraduate awards are given each year to outstanding students. The Chemical Rubber Company Introductory Chemistry Award is given to the outstanding student in introductory chemistry, the American Chemical Society Division of Analytical Chemistry Award is given to the outstanding student in analytical chemistry, the American Chemical Society-St. Louis Section, Outstanding Junior Chemistry Major Award is given to the outstanding junior chemistry major, and the outstanding senior receives the Alan F. Berndt Outstanding Senior Award.

Departmental Honors

The Department of Chemistry and Biochemistry will award departmental honors to those B.A. and B.S. degree candidates in chemistry with an overall grade point average of 3.2. They must also successfully complete Chem 3905, Chemical Research, and must present an acceptable thesis.

Career Outlook

The St. Louis metropolitan area has long been a major center for industrial chemistry, and in the past decade it

has become a focus for the establishment of life sciences research and development. A bachelor's degree in Chemistry provides a student with the professional training needed to play a part in this ever-changing industry.

A major in chemistry provides excellent preprofessional training in the health sciences, and a double major in chemistry and biology is often chosen by premedical and predoctoral students and those interested in graduate work in biochemistry and biology. A minor in chemistry provides the minimum qualification and training for a position as a laboratory technician in industry, hospital laboratories, etc.

A Master's degree in chemistry is often required for further advancement in the chemical industry, whereas a doctoral degree opens the door to many opportunities, including careers in the academic world, industrial research and development, and in government laboratories.

Undergraduate Studies

General Education Requirements

Students must satisfy the university and college general education requirements. Courses in chemistry may be used to meet the university's science and mathematics area requirement. The college's foreign language requirement fulfills the departmental requirements for B.A. candidates. B.S. degree candidates are not required to take a foreign language; however, the American Chemical Society (ACS) states that the study of a foreign language is highly recommended, especially for students planning to pursue graduate studies in chemistry.

Satisfactory/Unsatisfactory Restrictions

Chemistry majors may not take required chemistry, mathematics, or physics courses on a satisfactory/unsatisfactory basis, nor may B.S. degree candidates

Degree Requirements

Bachelor of Arts in Chemistry

This degree is intended primarily for preprofessional students in health science and related areas, as well as prelaw students interested in patent law. Candidates must complete the following chemistry courses:

- 1111, Introductory Chemistry I
- 1121, Introductory Chemistry II
- 2223, Quantitative Analysis
- 2412, Basic Inorganic Chemistry
- 2612, Organic Chemistry I
- 2622, Organic Chemistry II
- 2633, Organic Chemistry Laboratory
- 3022, Introduction to Chemical Literature
- 3312, Physical Chemistry I
- 3322, Physical Chemistry II
- 3333, Physical Chemistry Laboratory
- 4897, Seminar (1 credit)

In addition, candidates must complete one laboratory course chosen from Chem 3643, 4233, 4343, 4433, or 4733.

No more than 45 hours in chemistry may be applied toward the degree. Each chemistry major must present a seminar and pass a comprehensive examination during the senior year. The Department of Chemistry and Biochemistry may require students to pass a tracking test in order to enroll in the next level course, provided this or an equivalent test is administered to all students seeking to enroll in that course.

Bachelor of Arts in Chemistry with a Biochemistry Certificate

The university offers a certificate program for science majors who are interested in careers in biochemistry. This is an interdisciplinary program that involves additional courses in biochemistry and biology. In addition to the usual requirements for the B.A. degree in chemistry, the student must take the following courses:

Chemistry

4712, Biochemistry
4722, Advanced Biochemistry
4733, Biochemistry Laboratory
4764, Interdisciplinary Topics in Biochemistry or
4772, Physical Biochemistry

Biology

1811, Introductory Biology: From Molecules to Organisms
2012, Genetics
3622, Cell Biology
4602, Molecular Biology or
4614, Biotechnology Laboratory I

Students may obtain a minor in biology by adding Biol 1821 to the curriculum described above. The Biology department also offers a certificate in biochemistry.

Bachelor of Science in Chemistry

This is the first professional degree in chemistry. It may be taken as a terminal degree by students intending to become professional chemists or for preparation for graduate work in chemistry or biochemistry. Students may choose to specialize in chemistry or biochemistry.

Chemistry Option

Candidates must complete the requirements for the B.A. degree in chemistry. In addition, the following chemistry courses are required:

3643, Advanced Organic Chemistry Laboratory
4212, Instrumental Analysis
4233, Laboratory in Instrumental Analysis
4343, Physical Chemistry Laboratory II
4412, Inorganic Chemistry I
4433, Inorganic Chemistry Laboratory
4712, Biochemistry

Students must also take two elective hours of advanced work in chemistry at the 3000 level or above. Students are encouraged to take Chem 3905, Chemical Research, to fulfill the advanced elective requirement.

Biochemistry Option

Candidates must complete the requirements for the B. A. degree in chemistry. In addition, the following chemistry and biology courses are required:

Chemistry

4212, Instrumental Analysis
4233, Laboratory in Instrumental Analysis
4412, Inorganic Chemistry I
4712, Biochemistry
4722, Advanced Biochemistry
4733, Biochemistry Laboratory
4764, Interdisciplinary Topics in Biochemistry, or
4772, Physical Biochemistry or
3 credits of Chemistry 3905: Chemical Research, or 3 credits of Biology 4905: Research.

Biology

1811, Introductory Biology: From Molecules to Organisms
2012, Genetics or
3622, Cell Biology

If either research option is chosen, the project must be in biochemistry and must include a written final report submitted to the Department of Chemistry and Biochemistry.

Fifty-one hours of chemistry courses may be applied toward the degree. Each candidate must present a seminar and pass a comprehensive examination during the senior year.

Related Area Requirements

Bachelor of Arts and Bachelor of Science in Chemistry

Candidates for both degrees must also complete:

Math 1800, Analytic Geometry and Calculus I
Math 1900, Analytic Geometry and Calculus II
Math 2000, Analytic Geometry and Calculus III
Physics 2111, Physics: Mechanics and Heat
Physics 2112, Physics: Electricity, Magnetism, and Optics

Degrees with Certification to Teach Chemistry in Secondary Schools

One can be certified to teach chemistry at the secondary level with a degree either in Education or in Chemistry. All candidates for certification must enroll in a program that includes Levels I, II, and III course work in the College of Education. The Missouri Department of Elementary and Secondary Education requires that candidates for certification to teach secondary chemistry complete certain Science Core Courses and specialized courses in chemistry

Science Core Courses**Philosophy 3380**, Philosophy of Science**Biology 1811**, Introductory Biology I: From Molecules to Organisms**Chemistry 1111**, Introductory Chemistry I**Chemistry 1121**, Introductory Chemistry II**Biology 1202**, Environmental Biology, or another environmental science**Physics 2111**, Physics: Mechanics and Heat and**Geology 1001**, General Geology or**Atmospheric Science 1001**, Elementary Meteorology or**Introductory Astronomy 1001** or equivalent**Chemistry Endorsement****Chemistry 2223**, Quantitative Analysis**Chemistry 2612**, Organic Chemistry I**Chemistry 2622**, Organic Chemistry II**Chemistry 2633**, Organic Chemistry Laboratory**Chemistry 3312**, Physical Chemistry I or **Chemistry****3302**, Physical Chemistry for the Life Sciences**Chemistry 4712**, Biochemistry**Chemistry 4802** or **Education 3240**, Methods of Teaching Science in Secondary Schools**Chemistry 4837**, Teaching Intern Seminar**Bachelor of Arts in Chemistry with Teacher Certification**

Students must complete the B.A. in chemistry requirements, as well as the requirements for teacher certification. (See the College of Education section of this *Bulletin*.) This is a few science courses beyond the minimum listed above.

Chemistry 2412, Basic Inorganic Chemistry**Physics 2112**, Physics: Electricity, Magnetism, and Optics**Chemistry 3322**, Physical Chemistry II**Chemistry 3333**, Physical Chemistry Laboratory I and one additional advanced laboratory course**Minor in Chemistry****Requirements for the Minor**

Students may earn a minor in chemistry by completing the following program. The following five courses are required:

1111, Introductory Chemistry I

1121, Introductory Chemistry II

2223, Quantitative Analysis

2412, Basic Inorganic Chemistry

2612, Organic Chemistry I

2633, Organic Chemistry Laboratory

One course from the following list must be completed:

2622, Organic Chemistry II

3312, Physical Chemistry I

4712, Biochemistry same as Biology 4712

Courses, which are prerequisites to subsequent courses in the minor, may not be taken on a satisfactory/unsatisfactory basis. A GPA of at least 2.0 is required for the courses presented for the minor. At least three courses toward the minor must be completed at UM-St. Louis.

Bachelor of Science in Biochemistry and Biotechnology

The Department of Chemistry and Biochemistry, in cooperation with the Department of Biology, offers a Bachelor of Science degree in Biochemistry and Biotechnology. Information about this degree program may be found at <http://www.umsl.edu/biotech>.

Graduate Studies**Admission Requirements**

Individuals with at least the equivalent of the B.A. degree in chemistry may be admitted to the Graduate School as candidates for the M.S. degree or as precandidates for the Ph.D. degree in chemistry. A student in the M.S. program may request to transfer to the Ph.D. program by petition to the department.

The department admissions committee considers applicants' grade point averages and normally requires above-average performance in all areas of chemistry as well as physics and mathematics, or other evidence of high aptitude for graduate work in chemistry. Applicants' GRE scores, letters of recommendation, and academic programs are also considered. In some cases the committee may require successful completion of undergraduate course work as a condition of enrollment as a regular student.

Students with bachelor's degrees in fields other than chemistry may be admitted to pursue graduate studies in chemistry, but they must make up background deficiencies, usually by taking undergraduate course work.

Financial Support

Teaching assistantships are available to qualified applicants. Research assistantships and fellowships are available for advanced students. For further information, contact the Graduate Studies Committee, Department of Chemistry and Biochemistry.

Preliminary Advisement

Students who have been admitted for graduate work in chemistry will be contacted by the Director of Graduate Studies in order to develop a tentative plan of study which takes into consideration the student's background and interests. Entering students are required to demonstrate proficiency at the undergraduate level in four areas of chemistry (organic, inorganic, physical, and analytical). Proficiency may be demonstrated in one of the following ways:

- Outstanding performance in recent undergraduate course work.

- Satisfactory performance in standardized placement examinations. These examinations are given twice a year, approximately one week before the beginning of the fall and winter semesters.
- Successful completion of assigned course work.

The ultimate choice of whether students may enroll in the M.S. or Ph.D. degree programs resides with the chemistry faculty.

Distribution Requirement

All graduate students (M.S. and Ph.D.) must fulfill the distributing requirements as described under "Doctoral Degree Requirements."

Master's Degree Requirements

Master of Science in Chemistry

Candidates for the M.S. degree in chemistry must demonstrate proficiency in organic, inorganic, physical, and analytical chemistry within two years of initial enrollment.

A minimum of 30 hours is required, normally including 3 hours in Chem 6897 Chemistry Colloquium. No more than 3 hours in Chem 6897 may be applied toward the required minimum of 30 credit hours.

Master of Science in Chemistry with Thesis

Students selecting this option must be enrolled full-time for at least two consecutive semesters. During this time, students are expected to enroll in Chem 6905, Graduate Research in Chemistry, and conduct their thesis research. A maximum of 12 hours of Chem 6905 may be applied toward the required 30 hours. At least 9 hours must be at the 5000 level, excluding Chem 6905. A maximum of 9 hours in 3000 level or above courses outside the department may be accepted if students receive prior approval of their advisers and the Director of Graduate Studies. Students are expected to follow all other general requirements of the Graduate School regarding master's degree and thesis requirements.

Master of Science without Thesis

Unlike the thesis option, students need not be enrolled full-time. Of the required 30 hours, 15 credits must be at the 5000 level. A maximum of 6 credits of Chem 6905, Graduate Research in Chemistry, may be included in place of 4000 level courses. A maximum of 12 hours taken in 3000 level or above courses outside the department may be accepted with prior approval of the Director of Graduate Studies.

Doctoral Degree Requirements

Incoming doctoral students must demonstrate proficiency in organic, inorganic, physical, and analytical chemistry within one year of initial enrollment. A minimum of 60 hours is required, including research hours.

Distribution Requirement

Students must take chemistry courses for graduate credit at the 4000 and 5000 levels. Students may choose to concentrate the majority of their coursework in one of four areas (biochemistry, inorganic chemistry, organic chemistry, or physical chemistry). Students must complete at least 6 hours of chemistry coursework in one (or more) sub-disciplines(s) outside of their major emphasis area. The following courses may not be used to fulfill the distribution requirement: Chem. 4212, 4233, 4302, 4343, 4412, and 4433.

Qualifying Examinations

In addition to the requirements set forth by the Graduate School, each student seeking the Ph.D. degree must successfully complete a qualifying examination in his/her major area of specialization prior to advancement to candidacy. The format of the qualifying examination depends upon the student's major area of emphasis (biochemistry, inorganic, organic or physical). In general, the qualifying examination consists of either comprehensive written and/or oral examinations, usually administered near the end of the 4th semester, or a series of cumulative examinations given eight times a year. In the latter case, a student must pass a minimum of two cumulative examinations per year and eight cumulative examinations before the end of the 6th semester. At least six of these cumulative examinations must be in the student's major area of specialization. For more detailed information, contact the Director of Graduate Studies in the Department of Chemistry & Biochemistry.

Seminar Requirement

Students must present a seminar in their third year and during each subsequent year. The third year seminar may be the defense of the doctoral dissertation proposal. One of the seminars is for the purpose of describing dissertation research. Students must enroll in Chemistry 6897, Chemistry Colloquium, each semester they are in residence.

Advancement to Candidacy

In addition to general Graduate School requirements for advancement to candidacy, students must complete the following:

- 1) 21 hours of nondissertation work. **This may not include:**

Chem 4212, Instrumental Analysis
Chem 4233, Laboratory in Instrumental Analysis
Chem 4302, Physical Chemistry for the Life Sciences
Chem 4343, Physical Chemistry Laboratory II
Chem 4412, Inorganic Chemistry I
Chem 4433, Inorganic Chemistry Laboratory
Chem 6196, Advanced Reading in Chemistry
Chem 6487, Inorganic Problem Seminar
Chem 6687, Organic Problem Seminar
Chem 6787, Biochemistry Problem Seminar

Chem 6812, Introduction to Graduate Study in Chemistry

Chem 6822, Introduction to Graduate Research in Chemistry

Chem 6897, Chemistry Colloquium

but should include at least six credit hours of coursework outside of their major area of emphasis (see Distribution Requirement)

Courses in areas other than chemistry may be included with prior departmental approval.

- 2) Successfully pass a qualifying examination.
- 3) Present at least one seminar to the department on the dissertation research.
- 4) Participate in the undergraduate academic program as a teaching assistant for at least one semester.
- 5) Be in good standing.

Dissertation

Four copies of the dissertation must be submitted upon completion of the graduate research problem.

Probation and Dismissal

Students are dismissed from the Ph.D. program if they fail to pass their qualifying examination or otherwise fail to meet the academic and professional standards set forth by the Graduate School and the Department of Chemistry and Biochemistry.

Master of Science in Biochemistry and Biotechnology

The Department of Chemistry and Biochemistry, in cooperation with the Department of Biology, offers a Master of Science degree in Biochemistry and Biotechnology. Information about this degree program may be found at <http://www.umsl.edu/~biotech>.

Course Descriptions

Prerequisites may be waived by consent of the department or instructor. Some courses as indicated in the course description may be taken concurrently with the listed offering. Consult your department adviser for further information.

Students who have earned 24 or more semester hours of credit at any accredited post-secondary institutions(s) before the start of the fall 2002 semester must meet the general education requirements stipulated in the UM-St Louis 2001-2002 Bulletin. The following courses fulfill the Natural Sciences and Mathematics breadth of study requirements as described in that Bulletin:

1011, 1082, 1091, 1111, 1121, 1134, 2223, 2612, 2622, 2633, 3022, 3312, 3322, 3333, 3412, 3643, 3814, 3905, 4212, 4233, 4343, 4412, 4433, 4652, 4712, 4722, 4733, 4764, 4772, 4897,

1011 Chemistry in the Environment and Everyday Living (3) [MI, MS]

This course examines the role of chemistry in everyday life and in the environment, and is intended for students not pursuing scientific or engineering majors. Chemical principles are introduced to the extent necessary for

understanding of issues, but this course does not provide the basis for further technical courses. Two hours of lecture per week; on alternate weeks, one hour of discussion or two hours of laboratory.

1052 Chemistry for the Health Professions (4) [MI, MS]

An introduction to general, nuclear, structural organic, organic reactions and biochemistry. This course is designed primarily for students in nursing and related health professions, and should not be taken by students majoring in the physical or biological sciences. Chemistry majors may include neither Chem 1052 nor 1062 in the 120 hours required for graduation. Four hours of lecture per week.

1062 Organic and Biochemistry for the Health Professions (2) [MI, MS]

Prerequisites: any college chemistry course. An introduction to organic reactions and biochemistry. Chem 1062 is offered during the second half of the semester. Four hours of lecture per week.

1082 General Chemistry I (3) [MI, MS]

Prerequisite: Satisfactory score on math placement test. A broad introductory survey of chemical principles. Chem 1082 plus Chem 1091 are equivalent to Chem 1111. This alternative may be attractive to students who are not mathematically prepared for Chem 1111. Chemistry majors may not include both Chem 1082 and 1111 in the 120 hours required for graduation. Three hours of lecture per week.

1091 General Chemistry II (3) [MI, MS]

Prerequisites: Chem 1082 (or equivalent or consent of instructor) and Math 1030 and 1035 (may be taken concurrently). Additional work on the topics of Chem 1082, with emphasis on quantitative material. Introduction to the chemical laboratory. Chem 1082 plus Chem 1091 is equivalent to Chem 1111 for science majors. Chemistry majors who receive credit for Chem 1082 and Chem 1091 may not also include Chem 1011 or Chem 1111 in the 120 hours required for graduation. No student may take both Chem 3 and Chem 1091 for credit. Two hours of lecture per week, three and one-half hours of lab or one hour of discussion on alternate weeks.

1111 Introductory Chemistry I (5) [MS]

Prerequisites: Mathematics through college algebra and trigonometry (may be taken concurrently). Presents an introduction to the fundamental laws and theories of chemistry. Laboratory experiments are designed to demonstrate some aspects of qualitative and quantitative analysis and to develop skills in laboratory procedures. Chemistry majors may not include both Chem 1082 and 1111, nor both Chem 1011 and 1111 in the 120 hours required for graduation. Three hours of lecture and one hour of discussion per week; one hour of laboratory-lecture and three hours of laboratory per week.

1121 Introductory Chemistry II (5) [MI, MS]

Prerequisite: Chem 1111 or advanced placement. Lecture and laboratory are a continuation of Chem 1111. Three hours of lecture and one hour of discussion per week; one hour laboratory-lecture and three hours of laboratory weekly.

1134 Special Topics in Introductory Chemistry (1-5)

Prerequisite: Consent of instructor. A lecture or laboratory course to assist transfer students in meeting the requirements of Chem 1111 and 1121.

2223 Quantitative Analysis (3) [C, MI, MS]

Prerequisite: Chem 1121. Principles and practice of elementary quantitative chemistry. The lecture treats descriptive statistics with emphasis on small samples; various types of competing equilibria pertaining to acid-base, complexometric and potentiometric titrations; and an introduction to spectrophotometric processes. The laboratory provides exercises in titrimetric, gravimetric, and spectrophotometric techniques. Both portions of the course deal with the analytical chemistry of environmentally-significant problems. Two hours of lecture and four and one-half hours of laboratory weekly.

2412 Basic Inorganic Chemistry (2) [MI, MS]

Prerequisites: Chem 1121. Review of principles of atomic structure, covalent and ionic bonding. Properties of the elements and synthesis reactions and bonding aspects of important compounds of main group and transition metal elements. Two hours lecture per week.

2612 Organic Chemistry I (3) [MS]

Prerequisite: Chem 1121. An introduction to the structure, properties, synthesis, and reactions of aliphatic and aromatic carbon compounds. Three hours of lecture per week.

2622 Organic Chemistry II (3) [MI, MS]

Prerequisite: Chem 2612. A systematic study of organic reactions and their mechanisms; organic synthetic methods. Three hours of lecture per week.

2633 Organic Chemistry Laboratory (2) [C, MS]

Prerequisite: Chem 2612. An introduction to laboratory techniques and procedures of synthetic organic chemistry including analysis of organic compounds. One hour of lecture and four and one-half hours of laboratory per week.

3022 Introduction to Chemical Literature (1)

Prerequisite: Chem 2622 (may be taken concurrently) and Chem 3412. The course will familiarize the student with the literature of chemistry and its use. One hour of lecture per week.

3302 Physical Chemistry for the Life Sciences (3)

Prerequisites: Chem 2612 and Math 1800 or Math 1100, and Phys 1012. Principles and applications of physical chemistry appropriate to students pursuing degree

programs in the life sciences. Topics will include thermodynamics, equilibria, kinetics, and spectroscopy. This course is intended for undergraduates seeking the B.S. degree in Biochemistry and Biotechnology and does not fulfill the physical chemistry requirement for other Chemistry B.A. and B.S. degree programs.

3312 Physical Chemistry I (3)

Prerequisites: Chem 1121 and Math 2000 (may be taken concurrently), and Phys 2111. Principles of physical chemistry, including thermodynamics, theory of gases, phase equilibria, kinetics, crystal structure, spectroscopy, and quantum mechanics. Three hours per week.

3322 Physical Chemistry II (3)

Prerequisite: Chem 3312. Continuation of Chem 3312. Three hours of lecture per week.

3333 Physical Chemistry Laboratory I (2)

Prerequisite: Chem 2223 and Chem 3312. Experiments designed to illustrate principles introduced in Chem 3312. One hour of lecture and four and one-half hours of laboratory per week.

3643 Advanced Organic Chemistry Laboratory (2)

Prerequisites: Chem 2223, Chem 2622, Chem 2633. Chem 3022 may be taken concurrently. Identification of organic compounds by classical and spectroscopic methods; advanced techniques in synthesis and separation of organic compounds. One hour of lecture and four and one-half hours laboratory per week. Not for graduate credit.

3905 Chemical Research (1-10)

Prerequisite: Consent of instructor. Independent laboratory and library study, in conjunction with faculty member, of fundamental problems in chemistry. A written report describing the research is required.

4212 Instrumental Analysis (2)

Prerequisite: Chem 3322. Principles and applications of modern methods of instrumental analysis for analytical chemistry measurements. Topics will be selected from the areas of electrochemistry, absorption and emission spectroscopy, chromatography, mass spectrometry, surface analysis, and nuclear magnetic resonance. Two hours of lecture per week.

4233 Laboratory in Instrumental Analysis (2)

Prerequisites: Chem 4212 and Chem 3333. Experiments designed to illustrate the principles and practices of instrumental analysis, involving the use of modern instrumentation in analytical chemistry applications. One hour of discussion and four and one-half hours of laboratory per week.

4302 Survey of Physical Chemistry with Applications to the Life Sciences (3)

Prerequisites: Chem 2612 and Math 1800 or Math 1100, and Phys 1012. Principles of physical chemistry with

applications to the life sciences. Topics will include thermodynamics, equilibria, kinetics, and spectroscopy. This course will be taught simultaneously with Chem 3302, but students in 4302 will have additional assignments or projects. No student may receive credit for both Chem 3302 and 4302.

4343 Physical Chemistry Laboratory II (2)

Prerequisites: Chem 3322 (may be taken concurrently) and Chem 3333. Experiments designed to illustrate principles introduced in Chem 3322. One hour of lecture and four and one-half hours of laboratory per week. Not for graduate credit.

4412 Advanced Inorganic Chemistry I (3)

Prerequisites: Chem 3322 (may be taken concurrently) Chem 3412 and Chem 2622. An introduction to the chemistry of the elements, including atomic and molecular structure, acids and bases, the chemistry of the solid state, and main group and transition metal chemistry. Three hours of lecture per week.

4433 Inorganic Chemistry Laboratory (2)

Prerequisites: Chem 3333, Chem 4412 and Chem 3643, (Chem 3643 may be taken concurrently). The more sophisticated techniques of physical and analytical chemistry will be used to study inorganic compounds and their reactions. One hour of lecture and four and one-half hours of laboratory per week. Not for graduate credit.

4652 Spectroscopic Identification of Organic Compounds (3)

Prerequisite: Chem 3643. An applied approach to the use of spectroscopic techniques in organic chemistry. Topics to include integrated applications of infrared and Raman spectroscopy, nuclear magnetic resonance ^{13}C and ^1H , cw and pulsed and mass spectroscopy for the purpose of elucidating the structure of organic compounds. Three hours of lecture per week.

4712 Biochemistry (3)

Same as Biol 4712 Prerequisites: Chem 2612 and either Biol 1811 or Chem 2622. Examines the chemistry and function of cell constituents, and the interaction and conversions of intracellular substances. Students may not receive credit for both Biol 4712 and Chem 4712.

4722 Advanced Biochemistry (3)

Prerequisite: Chem 4712. Selected advanced topics in the chemistry of life processes. Three hours of lecture per week.

4733 Biochemistry Laboratory (2)

Prerequisite: Chem 4712 (may be taken concurrently), and Chem 2223. Laboratory study of biochemical processes in cellular and subcellular systems with emphasis on the isolation and purification of proteins (enzymes) and the characterization of catalytic properties. One hour of lecture and three and one-half hours of laboratory per week.

4764 Interdisciplinary Topics in Biochemistry (3)

Prerequisites: Chem 4712; Chem 4722 strongly recommended. Includes advanced studies of enzyme mechanisms, the role of metal ions in enzymatic and non-enzymatic processes, and the application of computational chemistry to biological systems. Three hours of lecture per week.

4772 Physical Biochemistry (3)

Prerequisite: Chem 3312 or Chem/Bio 4712. Designed to acquaint students with concepts and methods in biophysical chemistry. Topics that will be discussed include protein and DNA structures, forces involved in protein folding and conformational stability, protein-DNA interactions, methods for characterization and separation of macromolecules, electron transfer, and biological spectroscopy. Three hours of lecture per week.

4802 Curriculum and Methods of Teaching Physical Sciences (3)

Prerequisites: Tch Ed 3310 and a near major in the subject matter. A study of the scope and sequence of the physical science courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of science. To be taken prior to student teaching. This course must be completed in residence.

4814 Special Topics in Chemistry (1-10)

Prerequisite: Consent of instructor. A reading and seminar course in selected advanced topics.

4837 Chemistry / Physics Teaching Intern Seminar (1)

Same as Physics 4833. Prerequisite: Chem 4802 or Physics 4800. A seminar to accompany student teaching covering integration of physical science curricula and methods into the classroom setting. To be taken concurrently with Secondary Student Teaching, Sec Ed 3290. One-hour discussion per week.

4897 Seminar (1)

Prerequisites: Chem 3022 and senior standing. Presentation of papers by students, faculty, and invited speakers. Chemistry majors must enroll during the semester in which they intend to graduate. Completion of a comprehensive examination is a course requirement. One hour of lecture and one hour of discussion per week.

5142 Molecular Spectroscopy (3)

Prerequisite: Chem 3322. A broad treatment of the interaction of electromagnetic radiation with matter, emphasizing the unity of such interactions. Interpretation of molecular rotational, vibrational and electronic spectra in terms of geometric structure and dynamics. Description and interpretation of physical techniques used to obtain molecular spectra. Three hours of lecture per week.

5162 Chemical Applications of Group Theory (3)

Prerequisite: Chem 3322. A brief introduction to the fundamental relationships of group theory and molecular symmetry. Application of group theory to molecular orbital theory, molecular vibrations, and molecular spectra. Three hours of lecture per week.

5302 Advanced Physical Chemistry (3)

Prerequisite: Chem 3322. Covers advanced topics in physical chemistry. May include but is not limited to properties of solids and liquids, gas/solid and solid/liquid interfacial chemistry, optical and electron spectroscopy, and chemical dynamics. Three hours of lecture per week.

5322 Application of Thermodynamics and Reaction Kinetics in Chemistry (3)

Prerequisite: Chem 3322. Review of equilibrium thermodynamics. Focus is on statistical thermodynamics and reaction kinetics with an emphasis on solution phase chemistry. Three hours of lecture per week.

5394 Special Topics in Physical Chemistry (1-3)

Prerequisite: Consent of instructor. Selected topics in physical chemistry. May be taken more than once for credit.

5412 Typical Element Chemistry (3)

Prerequisite: Chem 4412 or an equivalent course. Chemistry of the main group elements and their compounds including such topics as electron deficient compounds, acids, bases and nonaqueous solvents, catenation and inorganic polymers, the solid state, organotypical element chemistry and energetics. Three hours of lecture per week.

5432 Spectroscopic Methods in Inorganic Chemistry (3)

Prerequisites: Chem 4412 or an equivalent course. Study of modern spectroscopic characterization methods of particular importance to inorganic systems, with emphasis on such techniques as multinuclear NMR spectroscopy, UV/visible and EPR spectroscopy, IR/Raman spectroscopy, and Mossbauer spectroscopy. Application of such methods to questions of structure, bonding and reactivity. Three hours of lecture per week.

5442 Coordination Chemistry (3)

Prerequisite: Chem 4412 or an equivalent course. Chemistry of the coordination compounds of the transition metals including such topics as kinetics and mechanisms of reaction, stereochemistry, ligand field theory, stability and electronic spectra. Three hours of lecture per week.

5452 Quantum Mechanical Foundations of Spectroscopy (3)

Prerequisites: Chem 3322. A review of relevant principles and techniques of quantum mechanics. Focus is on the use of quantum theory and molecular symmetry (group theory)

to understanding the structure and interpreting the spectra of atoms and molecules. Three hours of lecture per week.

5452 Organometallic Chemistry of the Main Group Elements (3)

Prerequisites: Chem 4412 or an equivalent course. A systematic study of main group element compounds containing carbon-metal or carbon-metalloid bonds. Emphasis will be on preparative methods, structures and reactions of various classes of compounds. Three hours of lecture per week.

5462 Organometallic Chemistry of the Transition Elements (3)

Prerequisites: Chem 4412 or an equivalent course. A study of the transition metal compounds containing metal-carbon bonds and related metal-element bonds, including their synthesis, structure and bonding, and reactions. Applications in organic synthesis and catalysis will also be presented. Three hours of lecture per week.

5494 Special Topics in Inorganic Chemistry (1-3)

Prerequisite: Consent of instructor. Selected topics in inorganic chemistry. May be taken more than once for credit.

5602 Advanced Organic Chemistry I - Physical Organic (3)

Prerequisites: Chem 2622 and 3322 Mechanism and theory of organic chemistry. Topics to include kinetics, transition state theory, reaction intermediates, and stereochemical analysis. Three hours of lecture per week.

5612 Advanced Organic Chemistry II - Reactions and Synthesis (3)

Prerequisite: Chem 2622. Examination of a variety of organic transformations typically utilized in organic synthesis. Topics will include carbon-carbon bond formation, pericyclic reactions, oxidation, reduction, and functional group interconversions. Mechanism and stereochemistry will be emphasized. Three hours of lecture per week.

5694 Special Topics in Organic Chemistry (3)

Prerequisite: Consent of instructor. Advanced topics of special current interest. May be taken more than once for credit. Topics that may be offered include: methods of organic synthesis, organometallics in organic synthesis, topics in bio-organic chemistry, organic thermochemistry, natural products chemistry, stereochemistry, photochemistry, heterocyclic chemistry, medicinal chemistry.

5794 Special Topics in Biochemistry (1-3)

Prerequisite: Consent of instructor. Selected topics in biochemistry. May be taken more than once for credit.

6196 Advanced Reading in Chemistry (1)

Prerequisite: Admission to the Ph.D. degree program. Reading and examinations in the subdisciplines of chemistry. Enrollment must begin after completion of any course deficiencies.

6487 Problem Seminar in Inorganic Chemistry (1)

Prerequisite: Consent of the inorganic chemistry staff. Problems from the current literature, presentations, and discussions by faculty, students and visiting scientists. Ph.D. students may take more than once for credit. Up to three credits may be applied to the M.S. degree program.

6687 Problem Seminar in Organic Chemistry (1)

Prerequisite: Consent of the organic chemistry staff. Problems from the current literature, presentations, and discussions by faculty, students, and visiting scientists. Ph.D. students may take more than once for credit. Up to three credits may be applied to the M.S. degree program.

6787 Problem Seminar in Biochemistry (1)

Prerequisites: Consent of the biochemistry staff. Problems from the current literature, presentations and discussions by faculty, students and visiting scientists. Ph.D. students may take more than once for credit. Up to three credits may be applied to the M.S. degree program.

6812 Introduction to Graduate Study in Chemistry (1)

Prerequisite: Consent of Graduate Adviser. Topics to be covered include: techniques of teaching of Chemistry in colleges and universities, methods of instruction and evaluation; and responsibilities of the Graduate Teaching Assistant in laboratory instruction; safety in the undergraduate laboratory, safety practices, emergency procedures; selection of research project and thesis adviser.

6822 Introduction to Graduate Research in Chemistry (1)

Prerequisites: Consent of Graduate Adviser. Topics include: safety in the research laboratory, safety practices, emergency procedures, hazardous materials, waste disposal, radiation safety; research ethics; chemistry information retrieval, computer assisted information retrieval, types of databases, searching bibliographic data bases.

6897 Chemistry Colloquium (1)

Presentation of papers by students, faculty, and invited speakers. One hour per week.

6905 Graduate Research in Chemistry (1-10)

Department of Criminology and Criminal Justice

Faculty

Richard Wright, Professor*, Chairperson
Ph.D., University of Cambridge
Robert Bursik, Professor*, Ph.D. Director
Ph.D., University of Chicago
G. David Curry, Professor*
Ph.D., University of Chicago
Finn Aage Esbensen,
E. Des Lee Professor of Youth Crime
And Violence*
Ph.D., University of Colorado
Janet L. Lauritsen, Professor*
Ph.D., University of Illinois-Urbana
Richard Rosenfeld, Professor*
Ph.D., University of Oregon
Eric Baumer, Associate Professor*
Ph.D., State University of New York at Albany
David Klinger, Associate Professor*, M.A. Director
Ph.D., University of Washington
Jody Miller, Associate Professor*
Ph.D., University of Southern California
Allen E. Wagner, Associate Professor Emeritus
Ph.D., Washington University
Rodney Brunson, Assistant Professor*
Ph.D., University of Illinois-Chicago
Beth Marie Huebner, Assistant Professor*
Ph.D., Michigan State University
Callie Rennison, Assistant Professor*
Ph.D., University of Houston
Eric Stewart, Assistant Professor*
Ph.D., Iowa State University
Timothy Maher, Lecturer
M.A., University of Missouri-St. Louis

*members of Graduate Faculty

Criminology and criminal justice faculty represent several academic disciplines. By integrating practice with theory, faculty are able to present a comprehensive picture of crime and the justice system. This nexus of theory and application is found most directly in the department's emphasis on understanding policy in criminology and criminal justice. All components of crime and justice are represented in the curriculum including criminal behavior, delinquency, crime prevention, arrest, prosecution, defense, court processing, probation, prison, and parole. A special feature of the program is the cadre of local professionals who supplement the regular faculty.

General Information

Degrees and Areas of Concentration

The department offers courses leading to the Bachelor of Science, the Master of Arts, and Ph.D. in criminology and criminal justice.

Cooperative Programs

Faculty members in the criminology and criminal justice department hold appointments as fellows in the Center for International Studies and the Institute for Women's and Gender Studies. Workshops, projects, credit courses, and other social services are brought to the criminal justice community.

Internships

Majors are strongly encouraged to participate in CCJ 3280 Internship in Criminology and Criminal Justice, during their junior or senior year. The internship affords students the opportunity to gain experience in a criminal justice agency under the joint supervision of agency personnel and criminology and criminal justice faculty.

Minor in Criminology and Criminal Justice

The minor gives recognition to those students from other major areas who find that criminology and criminal justice courses fit their academic or professional needs and/or interests.

Chair's List

Each semester, faculty members nominate undergraduates who have done outstanding work in one or more of their courses to the department's *Chair's List*. In addition to being nominated by faculty member, the student must meet a cumulative grade-point average threshold for placement on the *Chair's List*. The list is featured on the department's website, the students receive a special letter of recognition from the Chair, and the Dean of Arts and Sciences is notified of their accomplishment.

Undergraduate Studies

General Education Requirements

Majors must satisfy the university and college general education requirements. Courses used to fulfill the social science or state requirement may not be taken from courses in the major. Foreign language proficiency is not required, although students are encouraged to take foreign language courses. Majors may not take the following courses on a satisfactory/unsatisfactory basis: criminology and criminal justice courses; Soc 3220, Quantitative Techniques in Sociology; or Soc 3230, Research Methods. Additionally, substitutions which have been approved by departmental advisers for these courses may not be taken on a satisfactory/unsatisfactory basis.

Degree Requirements

Courses used to fulfill the social science or state requirements may not be taken from courses in the major. Students may register for 3000-5000 level courses only after completing Eng 3100 (Advanced Expository Writing).

Students may register for 3000-5000 level courses only after obtaining a signature from the adviser in criminology and

criminal justice. All prerequisites must be satisfied prior to enrolling in a course.

CCJ majors may not take course numbers 1100, 2260, or 3345 offered through UM-Independent Studies to fulfill degree requirements in the major.

Bachelor of science in criminology and criminal justice candidates must complete the core curriculum listed below:

Core Curriculum

The following courses in criminology and criminal justice are required:

- 1100, Introduction to Criminology and Criminal Justice
- 1110, Theories of Crime
- 1130, Criminal Justice Policy
- 1200, Foundations of Law; An Introduction to Legal Studies
- 2210, Research Methods in Criminology and Criminal Justice
- 2220, Statistical Analysis in Criminology and Criminal Justice
- 4390, Seminar in Criminology and Criminal Justice

One of the following courses in Criminology and Criminal Justice:

- 3305, Comparative Criminology and Criminal Justice
- 3325, Violence Against Women
- 4325, Gender, Crime, and Justice
- 4340, Race, Crime, and Justice

Two courses from the following four:

- 2230, Crime Prevention
- 2240, Policing
- 2260, Corrections
- 2270, Juvenile Justice and Delinquency

Two additional courses at the 3000, 4000, or 5000 level:

- 3043, History of Crime and Justice
- 3305, Comparative Criminology and Criminal Justice
- 3310, Computers in Criminal Justice
- 3320, The Death Penalty
- 3325, Violence Against Women
- 3330, White Collar Crime
- 3345, Rights of the Offender
- 4300, Communities and Crime
- 4320, Forms of Criminal Behavior
- 4325, Gender, Crime, and Justice
- 4335, Probation and Parole
- 4340, Race, Crime, and Justice
- 4350, Victimology
- 4380, Special Topics in Criminology and Criminal Justice
- 5515, Ethics in Criminology and Criminal Justice

Elective Courses

- 1150, Violence in America
- 1990, The City
- 2180, Alcohol, Drugs and Society

- 2250, Youth Gangs
- 2265, Capital Punishment
- 3280, Internship in Criminology and Criminal Justice
- 3290, Special Readings

Requirements for the Minor

The minor has been designed to ground students in the basics of criminology and criminal justice.

All minor candidates must take:

- 1100, Introduction to Criminology and Criminal Justice

The candidate must then select from two of the following three courses:

- 1110, Theories of Crime
- 1120, Criminal Law
- 1130, Criminal Justice Policy

Candidates must then complete 6 hours of criminology and criminal justice course work at the 2000 level or above

Candidates must also have a cumulative grade point average of 2.0 or better in the minor. None of the courses may be taken on a satisfactory/unsatisfactory (s/u) basis.

Graduate Studies

Master of Arts in Criminology and Criminal Justice

The department offers a Master of Arts degree in Criminology and Criminal Justice, which provides students with advanced theoretical and methodological training for research and management careers in criminal justice.

Admission Requirements

The minimum GPA for regular admission to graduate study is 3.0 on a 4-point scale and students are expected to begin their course of study in the Fall semester. Admission is competitive.

Degree Requirements

The M.A. in Criminology and Criminal Justice requires the completion of 33 credit hours, at least 21 of which are required to be in courses housed in the Department of Criminology and Criminal Justice. 12 of these hours represent the core of the curriculum. Students may choose between a thesis and nonthesis course of study. Students whose cumulative GPAs fall below 3.0 after 9 or more hours of work will be placed on probation and given one semester to raise their cumulative GPAs to at least the 3.0 threshold.

Plan of Study

Required Coursework (21 hours)

- 5415, Foundations of Criminological Theory (3; core)
- 6400, Proseminar: Criminology and Criminal Justice (3; core)
- 6405, Methods (3; core)
- 6410, Statistics (3; core)

Three additional Criminology and Criminal Justice seminars at the 6000 level (9; non-core)

Electives (12 hours)

Twelve elective hours of coursework are required; some or all of these credits may be earned in Criminology and Criminal Justice 6000 level seminars not counted toward the 21 hour requirement. Students may take a maximum of two 4000-level courses in partial fulfillment of this requirement but they must have the prior approval of the Graduate Committee. All electives taken outside the College of Arts and Sciences also must receive prior approval of the Graduate Committee.

Transfer Courses

Transfer courses are evaluated for acceptance on a case-by-case basis subject to the rules and regulations of the Graduate School. A maximum of 11 credit hours earned at other institutions can be credited toward the UMSL M.A. degree in Criminology and Criminal Justice.

Ph.D. Program in Criminology and Criminal Justice

Eligibility

Undergraduate applicants must have a baccalaureate degree or expect one by the end of the academic year in which they apply. Applicants must have a grade point average of 3.0 or greater (on a scale of A = 4.0) for the last 60 hours of undergraduate work.

Graduate applicants who have or will have a master's degree must have a grade point average of 3.0 or greater (on a scale of A = 4.0) for their graduate course work.

Application

To consider an applicant for admission, the Department of Criminology and Criminal Justice must have transcripts, three letters of recommendations, GRE scores and a writing sample. Applicants with master's degrees should include a chapter of their thesis. International students whose native language is not English are required to submit scores from the TOEFL examination.

Amount of Course Work

Sixty post-baccalaureate hours of graduate work are required for the Ph.D. More than half of these hours must be completed in residence. Twelve credit hours of dissertation research (CCJ 7499) are required. Students may enroll for dissertation credits (CCJ 7499) only when all other degree requirements have been completed.

Required courses for the Ph.D. are:

- 5415, Foundations of Criminological Theory
- 5475, Evaluation Research Methods
- 6400, Proseminar
- 6405, Methods
- 6410, Statistics
- 6420, Contemporary Criminological Theory
- 6440, Nature of Crime
- 6450, Criminal Justice Organization
- 6465, Qualitative Research Design

- 6470, Quantitative Research Design
- 6471, Evaluating Criminal Justice Interventions
- 6480, Multivariate Statistics

Students are also required to complete at least 9 hours from the following courses:

- 5533, Philosophy of Law
- 5555, Ethical and Legal Issues in Criminal Justice
- 6430, Law and Social Control
- 6431, The Nature of Punishment
- 6432, Criminal Law
- 6434, Human Rights
- 6435, Law, Courts, and Public Policy
- 6436, Comparative Legal Systems
- 6437, Private Justice
- 6441, Juvenile Delinquency
- 6442, Communities and Crime
- 6443, Violent Crime
- 6444, Organizational Crime
- 6445, Property Crime
- 6446, Sex Crime
- 6447, Public Order Crime
- 6448, Victimization
- 6451, Juvenile Justice Systems
- 6452, The Police
- 6453, Adjudication
- 6454, Corrections

Additional courses beyond the above requirements are taken as elective courses. These courses may be at the 5000 level. Students are also encouraged to take courses outside the Department of Criminology and Criminal Justice.

Comprehensive Examination

Graduate students in the Ph.D. program do not become recognized as Ph.D. candidates until they have passed the comprehensive examination. The goals of the comprehensive examination are to assess the student's familiarity with substantive literature, theory and methods of criminology and criminal justice and to evaluate the student's intellectual imagination and ability to apply knowledge to broad criminological questions.

The qualifying examination will consist of two parts—the first focusing on crime and criminality and the second on criminal justice. Each will integrate theory and methods into the substantive literature. Part one of the exam (on crime and criminality) will consist of a six-hour examination without access to notes or external references. Part two (on criminal justice) will be a 48-hour, non-collaborative, take-home examination.

Other information about the qualifying exam is available from the department.

The Dissertation

The dissertation is required of all Ph.D. candidates and demonstrates the student's scholarly expertise. The dissertation process formally begins when all other

requirements of the Ph.D. program have been met. The dissertation committee assists in selecting and developing the research problem and evaluates the student's work on that problem.

Career Outlook

The orientation of the criminology and criminal justice faculty and of the degree program prepares the graduate to work professionally for local, state, and federal agencies concerned with maintaining public safety by the prevention of crime and apprehension and rehabilitation of offenders. The B.S. in criminology and criminal justice is also advantageous for careers with various social agencies, especially those connected with the juvenile court system, probation and parole, and local police. Many students use the B.S. in criminology and criminal justice as preparation for law school.

The interdisciplinary curricula unify a body of knowledge from criminology, social science, law, public administration, and corrections, and provide the student with an understanding of the assumptions, values, and processes of the system of justice. Many prelaw students choose criminology and criminal justice as an undergraduate major because of the excellent preparation offered for law school. An internship program is offered for college credit. The liaison, supervision, and experience with public agencies that form an integral part of this program help the student arrive at a career decision.

Course Descriptions

Prerequisites may be waived by consent of the department or instructor.

Students who have earned 24 or more semester hours of credit at any accredited post-secondary institution(s) before the start of the fall 2002 semester must meet the general education requirements stipulated in the UM-St Louis 2001-2002 Bulletin. The following courses fulfill the Social Sciences breadth of study requirements as described in that Bulletin:

1100, 1200, 1075, 1110, 1120, 1130, 2180, 2210, 2220, 2226, 2230, 2240, 2260, 2270, 3043, 3290, 3305, 3310, 4300, 4320, 4325, 3043, 4335, 4340, 3345, 4350, 4380, 4390, 5515.

The following courses fulfill the Humanities breadth of study requirements: 2252.

1075 Crime and Punishment (3)

Same as Soc 1075 and ID1075. An introduction to sociological and psychological explanations of crime and punishment. An examination of private and governmental responses to the threats of crime and delinquent behavior.

1100 Introduction to Criminology and Criminal Justice (3)

Introduction to the basic concepts and approaches in the study of criminology and criminal justice. The major components of the criminal justice system are examined. Course fulfills the state requirement for non-criminal justice majors.

1110 Theories of Crime (3)

Prerequisite: CCJ 1100. Introduction to major theoretical approaches to the study of crime and justice.

1120 Criminal Law (3)

Prerequisite: CCJ 1100. Analysis of substantive criminal law, evidence and judicial procedure.

1130 Criminal Justice Policy (3)

Prerequisite: CCJ 1100. Introduction to criminal justice: policy making, planning, and implementation.

1150 Violence in America (3) [SS]

Prerequisites: CCJ 1100 or consent of instructor.

Overview of patterns and correlates of violence in America. Emphasis on the variety of forms of violent crime, such as murder, assault, robbery, rape, and gang violence. Includes an examination of violence as a response to lawbreaking.

1200 Foundations of Law: An Introduction to Legal Studies (3) [MI, V, SS]

Same as ID 1200 and Pol Sci 1200. As a broad liberal-arts approach to the study of law, this course is designed to familiarize students with legal ideas, legal reasoning, and legal processes. It also provides comparative and historical perspectives on law that will help explain legal diversity and legal change. Finally, it offers opportunities to explore some of the persistent issues in law and legal theory: for example, issues about the sources of law, the responsibilities of the legal profession, or the relative merits of the adversary system.

2180 Alcohol, Drugs, and Society (3)

Same as Soc 2180. Prerequisite: Soc 1010 or Psych 1C03. This course examines the medical, legal, and social aspects of alcohol and drug use. Medical aspects considered include treatment approaches and the role of physicians in controlling such behavior. In the legal realm, past and present alcohol and drug laws are explored. Cultural and social influences on alcohol and drug use are discussed.

2210 Research Methods in Criminology and Criminal Justice (3)

Prerequisite: CCJ 1100. Examination of basic methods of research design, measurement and data collection in criminology and criminal justice.

2220 Statistical Analysis in Criminology and Criminal Justice (3)

Prerequisites: CCJ 2210 and the university math requirement. An introduction to techniques of

quantitative data analysis. Both descriptive and inferential statistics are applied to problems in criminology and criminal justice.

2226 Law and the Individual (3)

Same as Pol Sci 2260. Prerequisite: Pol Sci 1100, or 1200, or consent of instructor. An examination of the formal and informal aspects and processes of the American judicial system and its effect on the individual. The course will cover criminal and civil law, public and private law, state and federal courts, and the processes by which disputes are transformed into legal actions. Topics include judicial selection and recruitment, plea bargaining, the impact and implementation of judicial decisions, the examination of a number of substantive areas of law like contracts and torts, and the role of courts in policy-making and dispute resolution. Course fulfills the state requirement.

2230 Crime Prevention (3)

Prerequisite: CCJ 1100. Examination of situational, social, and legislative approaches to the prevention of crime and delinquency. Emphasis on theories, implementation and consequences of these approaches

2240 Policing (3)

Prerequisite: CCJ 1100. Overview of current and historical perspectives on the function of American policing. Emphasis on the management of police organizations and relationships with the community.

2251 Youth Gangs (3)

Prerequisites: CCJ 1100 or consent of instructor. This course provides an overview of research and policy concerning youth gangs. Definitional and methodological issues will be examined, along with both qualitative and quantitative research. Topics include: the causes of gangs and gang involvement; crime, victimization, and drug involvement; and variations by race, gender, time period, and geography.

2252 Philosophical Foundations of Criminal Justice (3)

Same as Phil 2252. Addresses fundamental conceptual and ethical issues that arise in the context of the legal system. Questions may include: How does punishment differ from pre-trial detention? How, if at all, can it be justified? Is the death penalty ever justified? When is it morally permissible for juries to acquit defendants who are legally guilty? Is plea bargaining unjust? When might people be morally obligated to obey?

2260 Corrections (3)

Prerequisite: CCJ 1100. Examination of correctional philosophies and practices. Emphasis on the history of correction, the formal and informal organization of correction facilities, inmate rights, and correctional alternatives.

2265 Capital Punishment (3)

Prerequisites: CCJ 1100 or consent of instructor. Consideration of various aspects of the death penalty,

including an examination of its history, ethics, application, and international setting.

2270 Juvenile Justice and Delinquency (3)

Prerequisite: CCJ 1100. Examination of formal and informal responses to juvenile delinquency. Emphasis on theories of delinquency and the decision-making processes of police, court and probation officials.

3043 History of Crime and Justice (3)

Same as Hist 3043. Prerequisites: Junior Standing, CCJ 1110, 1120, 1130, 2210, 2220, and Eng 3100, or consent of instructor. The analysis, development, and change in philosophies and responses to crime. Emphasis on major forms and definitions of crime, the emergence of modern policing, the birth of the prison, and the juvenile court.

3209 Forensic Anthropology (4)

Prerequisites: Anth 1005, or Biology 1102 or consent of instructor. Same as Anth 3209. Students learn basic human dental and skeletal anatomy and the methods used by biological anthropologists and archaeologists to collect and analyze human skeletal remains, including how to age and sex skeletal remains, identify ethnic markers, determine stature and handedness, and identify the presence of trauma and/or pathology. Also covers the role of the forensic anthropologist in crime scene investigations and human rights issues. In the weekly lab section students will have an opportunity for hands-on application of techniques to skeletal remains.

3280 Internship in Criminology and Criminal Justice (3)

Prerequisite: Junior standing. Internship under faculty supervision in a criminal justice setting. May be repeated once.

3290 Special Readings (1-6)

Prerequisite: Consent of instructor. Individualized study, under regular faculty supervision, designed to meet particular educational needs of selected students.

3305 Comparative Criminology and Criminal Justice (3)

Prerequisites: CCJ 1120, 1130, 2220 and Eng 3100, or consent of instructor. Analysis of crime and criminal justice systems in selected cultures. Emphasis on the ways in which these cultures define and respond to criminal behavior. Fulfills CCJ diversity requirement.

3310 Computers in Criminal Justice (3)

Prerequisites: CCJ 1120, 1130, 2220 and Eng 3100 or consent of instructor. Use of computers, data base systems, and software applications in research and professional practice.

3320 The Death Penalty (3)

Prerequisites: CCJ 1100. An examination of the history, application, and attitudes toward the death penalty.

3325 Violence Against Women (3)

Prerequisites: Junior Standing, CCJ 1110, 1120, 1130, 2210, 2220, and Eng 3100, or consent of instructor. Same as WGS 3325. This course examines the nature, extent, causes and consequences of various types of violence against women, including rape, sexual assault, stalking, and intimate partner violence. Criminal justice policy and practice regarding violence against women are also examined. Fulfills CCJ diversity requirement.

3330 White Collar Crime (3)

Prerequisites: Junior Standing, CCJ 1110, 1120, 1130, 2210, 2220, and Eng 3100, or consent of instructor. This course examines the physical and financial harm caused by crimes committed by corporations and business employees. Theoretical and empirical perspectives will be examined. Topics include: definitional issues and ethics; public perceptions; social, political and economic impact; and legal decision-making.

3345 Rights of the Offender (3)

Prerequisites: CCJ 1120, 1130, 2220 and Eng 3100, or consent of instructor. Analysis of the objectives of criminal law regarding the rights of persons suspected or convicted of crime. Emphasis on rights regarding the police, the court, and in correctional settings.

4300 Communities and Crime (3)

Same as Soc 4300. Prerequisites: CCJ 1110, 1120, 1130, 2210, 2220, and English 3100 or consent of instructor. Analysis of the sources, consequences, and control of crime within communities. Emphasis on social and ecological theories of crime, and on population instability, family structure, and the concentration of poverty as causes of crime.

4320 Forms of Criminal Behavior (3)

Same as Soc 4320. Prerequisites: CCJ 1110, 1120, 1130, 2210, 2220, and English 3100 or consent of instructor. Examination of major types of criminal behavior including violent, property, public order, and organizational offenses. Emphasis on theories of and responses to these crimes.

4325 Gender, Crime, and Justice (3)

Same as Soc 4325. Prerequisites: CCJ 1110, 1120, 1130, 2210, 2220, and English 3100 or consent of instructor. Analysis of the role of gender in crime and in the justice system. Emphasis on gender differences in crime commission, criminal processing, and the employment of women in criminal justice agencies. Fulfills CCJ diversity requirement.

4335 Probation and Parole (3)

Prerequisites: CCJ 1110, 1120, 1130, 2210, 2220, 2260, and Eng 3100 or consent of instructor. Analysis of alternatives to incarceration and postincarceration supervision. Emphasis on diversion, restitution, and community reintegration.

4340 Race, Crime, and Justice (3)

Same as Soc 4340. Prerequisites: CCJ 1110, 1120, 1130, 2210, 2220, 2260 or consent of instructor. Analysis of the involvement of racial minorities in crime and the criminal justice system. Emphasis on group differences in offending, processing, victimization, and employment in criminal justice agencies. Fulfills CCJ diversity requirement.

4350 Victimology (3)

Prerequisites: CCJ 1110, 1120, 1130, 2210, 2220, and Eng 3100 or consent of instructor. Analysis of major perspectives on victimization. Emphasis on patterns of victimization, the role of victims in the generation of crime, and the experience of the victim in the criminal justice system.

4380 Special Topics in Criminology and Criminal Justice (3)

Prerequisites: CCJ 1110, 1120, 1130, 2210, 2220, and Eng 3100 or consent of instructor. In-depth study of a selected topic in criminology and criminal justice.

4390 Seminar in Criminology and Criminal Justice (3)

Prerequisites: CCJ 1110, 1120, 1130, 2210, 2220, Eng 3100, and senior standing, or consent of instructor. In this capstone course, students demonstrate the ability to work independently, integrating theory and research in criminology and criminal justice in a major research paper supervised by the instructor.

4487 Philosophy of Law (3)

Prerequisite: CCJ 1100, and 3 hours of philosophy or consent of instructor. Same as Phil 4920. An examination of typical problems raised by law, including the basis of legal obligations and rights, relations between law and morality, the logic of legal reasoning, and the justification for punishment. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

4650 Forensic Issues in Mental Health (3)

Same as SW 4650. This is an intensive issues course, investigating the intersection between the legal system and mental health. Students will explore issues involved in civil and criminal trial proceedings such as insanity defenses, diminished capacity, and competency to stand trial, civil commitment, battered women and rape trauma syndrome, sexual abuse of children, child custody, and domestic violence. In addition, the course will examine the roles of mental health practitioners as forensic evaluators, trial consultants and expert witnesses in a variety of mental health related cases.

5415 Foundations of Criminological Theory (3)

Same as Soc 5415. Prerequisite: Graduate standing and consent of instructor. Examination of the history of criminological thought incorporating the major works of such theorists as Bentham, Beccaria, Marx, Durkheim, Lombroso, Sutherland, and Merton.

5475 Evaluation Research Methods (3)

Same as Psych 5475, Soc 5475, and PPA 6750. Prerequisites: At least one course in Research Design and Statistics at the graduate level. A comparative study of research strategies with regard to data sources, data collection, and modes of analysis that are appropriate for program evaluation research. Attention is given to observational, survey, and quasi-experimental methodologies.

5515 Ethics in Criminology and Criminal Justice (3)

Same as Phil 5515. Prerequisites: CCJ 1110, 1120, 1130, 2210, 2220, Phil 2253, 2254, 2256, 4430, 4435, 4438, or consent of instructor. Examination of major ethical issues encountered in criminology and criminal justice research and practice.

5531 The Nature of Punishment (3)

Same as Phil 5531. Prerequisite: Graduate standing. Or consent of instructor. The historical development of punishment philosophies and techniques. Topics include the emergence of the modern prison, the joining of medical and legal treatment, and rationales for alternative forms of punishment.

5533 Philosophy of Law (3)

Same as Phil 5533. Prerequisite: Graduate standing or consent of instructor. Examination of origins of law and the basis for legal obligation. Specific consideration of the justification of punishment, morality and law, and legal reasoning.

5555 Ethical and Legal Issues in Criminal Justice (3)

Same as Phil 5555. Prerequisite: Graduate standing or consent of instructor. Examination of the moral and legal aspects of the policies and practices of criminal justice agencies and agents. Issues may include treatment of offenders, the role of technology, and research and professional ethics.

6400 Proseminar (3)

Prerequisite: Graduate standing. Must be taken in the first semester. A critical examination of theoretical, methodological and policy issues in criminology and criminal justice. Focus is on the nature of crime, policing, pretrial processes, adjudication, and corrections.

6405 Methods (3)

Prerequisites: Graduate standing. Examination of basic methods for research design and data collection. Topics include participant observation and interviewing, survey research, aggregate data analysis, and experimental design.

6410 Statistical Applications in Criminology and Criminal Justice (3)

Prerequisites: CCJ 6405. Examination of elementary principles of quantitative analysis and their application to crime and justice problems. Topics include univariate, bivariate and multivariate procedures for discrete and

continuous data, and a comprehensive introduction to ordinary least squares regression.

6420 Contemporary Criminological Theory (3)

Prerequisite: CCJ 5415. Examination of contemporary explanations of crime and criminal justice. Theories covered include strain, control, cultural, labeling, conflict, as well as more recent attempts at theoretical integration and multidisciplinary integration.

6422 Law, Courts, and Public Policy (3)

Same as Pol Sci 6422. Prerequisite: Graduate standing. Analysis of public policies, as represented by laws, court decisions, and agency adjudication, judicial review discrimination, affirmative action, urban planning, social welfare, intergovernmental relations, environmental law, freedom of information, and privacy concerns will be surveyed. The relationship between courts and the Constitution, courts and legislatures, and courts and the administrative process will be stressed.

6430 Law and Social Control (3)

Same as Soc 5461. Prerequisites: Graduate standing and consent of instructor. Examination of the relationship between law and other social institutions, the values and interests that are expressed in law and shaped by legal structures and processes, and law as an instrument of public policy, social control, and social change.

6434 Human Rights (3)

Prerequisite: Graduate standing or consent of instructor. Examination of human rights from historical and cross cultural perspectives. Topics include capital and corporal punishment, political prisoners, rights of the accused, and rights of those imprisoned.

6435 Gender, Crime and Criminal Justice (3)

Same as WGS 6435. Prerequisite: Graduate Standing. This course provides an analysis of theories of crime, crime processing and gender. Topics examined include the role of gender in criminal offending and victimization. The impact of gender on criminal/juvenile justice system processing and treatment will be addressed.

6436 Comparative Legal Systems (3)

Prerequisite: Graduate standing or consent of instructor. Examination of crime and criminal justice systems in world perspective.

6437 Private Justice (3)

Prerequisite: Graduate standing or consent of instructor. Examination of the private sector's impact on formal criminal and juvenile justice systems, as well as the development of private security and informal justice systems. Financial incentives, moral and legal issues are explored.

6440 Nature of Crime (3)

Prerequisite: Graduate standing or consent of instructor. Examination of patterns and correlates of crime at the

individual, situational, and aggregate levels. Topics include definitions of crime, offending typologies, and criminal careers.

6441 Juvenile Delinquency (3)

Prerequisite: Graduate standing or consent of instructor. Examination of youth crime and juvenile offenders. Topics include definitions of juvenile crime, and theories of juvenile crime causation in the United States

6442 Communities and Crime (3)

Prerequisite: Graduate standing or consent of instructor. Examination of the trends and sources of crime and social disorder across communities. The course emphasizes relationships among crime, fear of crime, neighborhood change, neighborhood responses to crime, and public policies.

6443 Violent Crime (3)

Prerequisite: Graduate standing or consent of instructor. Examination of the sources and patterns of violent offending across time and space. Topics include conceptions and typologies of violent crimes and offenders, victim-offender relationships, and efforts to predict and control violent offending.

6444 Organizational Crime (3)

Prerequisite: Graduate standing or consent of instructor. Examination of crime by and within groups. Focuses on the types of criminal behavior known as organized crime, white collar crime, and political corruption.

6445 Property Crime (3)

Prerequisite: Graduate standing or consent of instructor. Examination of the sources and patterns of property offending across time and space. Topics include conceptions and typologies of property crimes and offenders, victim-offender relationships, and efforts to predict and control property offending.

6446 Sex Crime (3)

Same as WGS 6446. Prerequisite: Graduate standing and consent of instructor. Examination of consensual and non-consensual sexual offending. Topics include historical development of laws regulating sexual conduct, controversies surrounding the application of these laws, and the nature and distribution of sexual offenses.

6447 Public Order Crime (3)

Prerequisite: Graduate standing or consent of instructor. Examination of the nature of, prevalence of, and efforts to control public order crimes such as gambling, illicit drug use, prostitution, vagrancy, and disorderly conduct. The function of public order crimes as a means to control disruptive or threatening persons and groups is emphasized.

6448 Victimization (3)

Prerequisite: Graduate standing or consent of instructor. Examination of the risks and consequences of crime for its

victims. Issues considered include victim-offender relationships, characteristics of victims, the nature of the injuries they experience and criminal justice procedure; that involve them.

6450 Criminal Justice Process and Policy (3)

Prerequisite: Graduate standing. An analysis of criminal justice as a network of decisions and complex organizations. Topics include sources of criminal justice policy, policy agendas, implementation and evaluation.

6451 Juvenile Justice Systems (3)

Prerequisite: Graduate standing. An examination of the historical evolution of juvenile justice and the processes by which specific behaviors are identified as delinquent. Informal responses to delinquency also are explored.

6452 The Police (3)

Prerequisite: Graduate standing or consent of instructor. Historical, social and political analysis of policing in America. Examination of federal, state, county, and municipal agencies.

6453 Adjudication (3)

Prerequisite: Graduate standing or consent of instructor. Examination of the objectives, institutions and processes involved in the adjudication of offenders. Topics address the structure and function of the judicial system and principal court actors.

6454 Corrections (3)

Prerequisite: Graduate standing or consent of instructor. Examination of the history, forms, and functions of correctional philosophies, institutions, programs, and policies. Topics include the structure and functions of prisons and jails, community corrections, intermediate sanctions, and the growth of correctional control in modern society.

6465 Qualitative Research Design (3)

Prerequisite: Graduate standing. Examination of participant observation and informant and respondent interviewing. Topics include gaining access, sampling, data collection and analysis, and legal and ethical concerns.

6470 Quantitative Research Design (3)

Prerequisite: Graduate standing or consent of instructor. Examination of experimental, longitudinal, and cross-sectional designs. Sources of data, sampling procedures, operational definitions, and issues of reliability are also discussed.

6471 Evaluating Criminal Justice Interventions (3)

Prerequisites: CCJ 6405 and CCJ 6410. This course examines a broad range of interventions designed to prevent crime or improve some aspect of the criminal justice system. The validity, reliability, and feasibility of differing intervention designs are addressed. Several major criminal justice evaluations are discussed.

6480 Multivariate Statistics in Criminology (3)

Prerequisite: CCJ 6405 and CCJ 6470. Introduction to the general linear model with applications to multivariate problems in criminal justice and criminology. Topics include advanced ordinary least squares, modeling, time series analysis, simultaneous equations, and analysis of limited dependent variables.

6485 Directed Readings/Research in Criminology and Criminal Justice (1-6)

Prerequisite: Consent of Instructor. Directed reading and research, under faculty supervision, designed to meet particular educational needs of selected students.

6495 Internship in Criminology and Criminal Justice (3)

Prerequisite: Graduate standing or consent of instructor. Supervised placements with criminal justice agencies. Designed primarily for students with limited field experience.

6498 M.A. Thesis Research (1-6)

Prerequisites: Graduate standing and consent of instructor.

6500 Professional Proseminar: Criminology & Criminal Justice (3)

Prerequisite: Graduate Standing. (Must be taken in the first semester.) A critical examination of theoretical, methodological, and policy issues confronting criminal justice professionals. Focus is on nature of crime, policing, corrections and community supervision.

6505 Research Methods for Criminal Justice Professionals (3)

Prerequisites: Graduate Standing. Examination of basic and applied methods for research design and data collection. Topics include participant observation and interviewing, surveys, aggregate data analysis, and program evaluation.

6510 Applied Statistics in Criminology & Criminal Justice (3)

Prerequisites: CCJ 4505. Examination of elementary principles of quantitative analysis and their application to criminal justice settings. Topics include univariate, bivariate, and multivariate procedures for discrete and continuous data routinely used by criminal justice professionals.

7499 Ph.D. Dissertation Research (1-6)

Prerequisite: Graduate standing or consent of instructor. To be arranged.

Department of Economics**Faculty**

David C. Rose, Professor*, and Chairperson
Ph.D., University of Virginia

Sharon G. Levin, Professor Emeritus*
Ph.D., University of Michigan

Thomas R. Ireland, Professor Emeritus
Ph.D., University of Virginia

Joseph P. McKenna, Professor Emeritus
Ph.D., Harvard University

William E. Mitchell, Professor Emeritus
Ph.D., Duke University

Donald Phares, Professor Emeritus
Ph.D., Syracuse University

Susan K. Feigenbaum, Professor*
Ph.D., University of Wisconsin

Robert L. Sorensen, Professor*,
Director of Undergraduate Studies
Ph.D., Virginia Polytechnic Institute

Lawrence H. White, Professor*; Friedrich A. Hayek
Professor in Economic History
Ph.D., University of California, Los Angeles

Anne Winkler, Professor*
Economics and Public Policy Administration
Ph.D., University of Illinois at Urbana-Champaign

Sel Dibooglu, Associate Professor*
Ph.D., Iowa State University

Clinton A. Greene, Associate Professor*
Ph.D., University of California-Davis

Donald J. Kridel, Associate Professor*,
Director of Graduate Studies
Ph.D., University of Arizona

Herbert D. Werner, Associate Professor Emeritus
Ph.D., University of California-Berkeley

Lea-Rachel Kosnik, Assistant Professor
Ph.D., University of California, Los Angeles

William H. Rogers, Assistant Professor
Ph.D., Colorado State University

Michael T. Allison, Senior Lecturer
A.B.D., University of Virginia

Kathleen Phares, Senior Lecturer Emeritus
M.A., University of Missouri-St. Louis

Brian Speicher, Senior Lecturer
A.B.D., Washington University

Mary Suiter, Lecturer, and
Director for the Center for Entrepreneurship
And Economic Education
M.A., University of Delaware

*members of Graduate Faculty

General Information**Degrees and Areas of Concentration**

Several degree programs are offered by the economics department. The B.A. in economics provides a flexible liberal arts orientation for students. The B.S. in economics places more emphasis upon developing the analytical and quantitative skills used in analysis. Both degrees can be tailored to meet the career interests of the student.

The economics faculty considers research an integral part of good teaching. Research projects in recent years have dealt with energy, public choice, industrial organization, nonlinear modeling, property rights, wage discrimination, urban economic development, health economics and aging, economics of science, economics of gender, poverty and welfare, and government regulations.

The economics department also offers courses at the undergraduate level in geography.

A graduate program offers work leading to the M.A. degree in economics in preparation for careers in teaching, research, government, and industry. The program includes course work in macroeconomic theory, urban, international, industrial, and quantitative economics; and research methodology. The program can accommodate prospective full-time students as well as those who wish to study part-time solely in the evening. Classes are small, and student-faculty interaction is encouraged.

The economics department cooperates with the College of Business Administration and the Master's in Public Policy Administration program.

Departmental Honors

A student may earn departmental honors with a GPA of 3.6 in economics and the recommendation of the department.

Minor in Economics

A minor in economics is also available. See the following section for requirements.

Undergraduate Studies**General Education Requirements**

All undergraduate economics majors must meet the university and college general education requirements. Candidates for the B.A. degree may take any foreign language to meet this requirement. Candidates for the B.S. degree take mathematics and quantitative courses instead of the foreign language requirement. Courses in economics may be used to meet the university social sciences requirement.

Education majors specializing in economics must fulfill the requirements for the bachelor of arts degree. These majors are responsible for obtaining an adviser in the Department of Economics.

All prerequisites for economics courses must be completed with a C- or better.

Satisfactory/unsatisfactory Option

Courses outside the major field and Econ 1001, Principles of Microeconomics, and Econ 1002, Principles of Macroeconomics, may be taken on a satisfactory/unsatisfactory basis.

Degree Requirements

Bachelor of Arts in Economics

Candidates for the B.A. degree must take at least 33, but no more than 45, hours in economics. At least 27 hours must be above the 2000 level. All required courses for the major must be completed with a grade of C- or better. The following courses are required:

1001, Principles of Microeconomics
1002, Principles of Macroeconomics
3001, Intermediate Economic Theory: Microeconomics
3002, Intermediate Economic Theory: Macroeconomics
3100, Economic Statistics
3200, Money, Banking, and Monetary Theory
3800, History of Economic Thought

Bachelor of Science in Economics

Candidates for the B.S. degree must complete at least 36, but no more than 45, hours in economics. At least 30 hours must be at or above the 2000 level. All required courses for the major must be completed with a grade of C- or better. The following courses are required:

1001, Principles of Microeconomics
1002, Principles of Macroeconomics
3001, Intermediate Economic Theory: Microeconomics
3002, Intermediate Economic Theory: Macroeconomics
3100, Economic Statistics
3200, Money, Banking, and Monetary Theory
4100, Introduction to Econometrics
Math 1800, Analytic Geometry and Calculus I, or
Math 1100, Basic Calculus

Also required are two of the following:

4030, Managerial Economics
4040, Analysis of Business Cycles
4110, Applied Econometrics
4120, Time Series Econometrics for Economics and Finance
4130, Econometric and Time Series Forecasting
4150, Mathematical Economics
4160, Geospatial Economic Analysis
or any mathematics course numbered 1900 or above (with consent of adviser)

Complementary Areas of Study

The department encourages all majors to develop breadth in related disciplines. Course work and minors are available in a number of areas such as business administration, computer science, statistics, and political science. Students should check with their advisers for recommendations concerning courses in these areas. The department suggests the

following supplemental course work for students interested in pursuing doctoral-level graduate work in economics or careers in general business. It also encourages all students to obtain work experience by enrolling in the Internship in Applied Economics (Econ 4990).

Graduate School Preparation:

It is recommended that students considering doctoral-level graduate work in economics also take:

Math 1900, Analytical Geometry and Calculus II
Math 2000, Analytical Geometry and Calculus III
Math 2020, Differential Equations
Math 2450, Linear Algebra
Math 4100, Advanced Calculus
Math 4200, Mathematical Statistics

General Business Preparation:

It is recommended that students interested in pursuing careers in business also take:

BA 2400, Fundamentals of Financial Accounting
BA 2410, Managerial Accounting
BA 2900, Legal Environment of Business
BA 3500, Financial Management
BA 3700, Basic Marketing

Requirements for the Minor

Candidates for a minor in economics must take a minimum of 18 hours in economics. At least 12 hours must be at or above the 2000 level. Econ 3100, Economic Statistics, cannot be counted towards the economics minor if the student has also taken Math 1310, Math 1320, Math 1105, or the equivalent.

The following courses are required:

1001, Principles of Microeconomics
1002, Principles of Macroeconomics
3001, Intermediate Economic Theory: Microeconomics

It is also recommended that students take Econ 3002, Intermediate Economic Theory: Macroeconomics

A GPA of 2.0 or better is required for courses presented for the minor. The satisfactory/unsatisfactory (s/u) option may be applied to Econ 1001 and 1002 only.

Graduate Studies

Two-Three B.S./M.A. Dual Degree Program in Economics

The 2+3 B.S./M.A. in Economics is designed to allow selected students – transfer and native – to complete the requirements for both degrees in five years of full-time study (where full time is defined as 15 credit hours each semester or 30 credit hours per calendar year). The accelerated nature of this program requires the student to take up to 12 hours of approved 4000, and above level dual-listed courses in the senior year, which will also be applied towards the Master's degree requirements. The total number of credit hours

required to complete the B.S. + M.A. dual program will equal 138 graded semester credit hours.

Admission Requirements

Applicants will have completed at least sixty (60) graded semester credit hours of course work which will include all the general education requirements as well as college algebra or a higher level mathematics course, introductory microeconomics and macroeconomics. A minimum G.P.A. of 3.0 is also required. Applicants must be nominated by a full time regular economics faculty member. Applications will be considered during and after the semester in which the student completes 60 undergraduate credit hours.

Provisional Status

Students who are accepted into the program will be admitted provisionally. During the third-year of full-time study (the first year of on-campus study for transfer students arriving with an associates degree from a 2-year college), the student will concentrate on course work required for the B.S. degree in economics. This will normally include completion of Econ 3200, 3001, 3002, 3100; at least 6 hours of economics electives; course work in mathematics; and electives in related areas. Provisional status will be lifted when 30 hours of approved semester credit hours are completed with a GPA of 3.0 or higher.

Dual Enrollment

During the fourth and fifth years of study, students will be allowed to dual enroll in both undergraduate and graduate courses with the consent of their advisor. To complete the remaining requirements for the B.S. degree, the student will normally enroll in: Econ 4100; three additional electives in economics of which two must be selected from Econ 4150, 4040, 4030, 4110, 4120, or 4130; up to three 5000 level courses in economics; and additional hours of undergraduate course work to complete a total of 120 credit hours. (Not more than 50 hours of economics course work may be counted towards the major.) Of the hours approved taken at the 5000 or above level in economics, up to 12 hours will be counted towards the 30-hour minimum (after all prerequisites have been met) required for the Masters degree. Note: Neither Econ 4100 or 4150 will be counted toward the 30 hour minimum. After the student has completed the first 120 hours required for the undergraduate degree, the final year of study will normally require completion of 18 hours of additional courses at the 5000 level and above. These must include Econ 5140, 5001, 5002, and 5100. The Director of Graduate Studies must approve all courses for the dual degree. A maximum of 6 hours (of the 30 required for the M.A.) may be taken at the 4000 level.

Awarding of Degree

The B.S./M.A. degrees will be awarded when all requirements for the M.A. degree have been completed. Students who officially withdraw from the "2 + 3" Dual Degree Program in Economics and who have successfully completed all of the requirements for the B.S. degree will be awarded the B.S. degree.

Master of Arts in Economics

The Department of Economics offers a Master of Arts in Economics with two options: general economics and business economics.

Admission Requirements

An undergraduate major in economics is not required for acceptance into the program. Application for admission may be submitted at any time, although class work formally begins in late August, mid-January, and mid-June. Candidates must meet the general admission requirements of the Graduate School, submit GRE scores (Advanced Economics optional), and submit two letters of recommendation from persons qualified to judge the candidate's potential for success in the program.

The admissions decision is based on the applicant's academic transcript, GRE scores, letters of recommendation, and a personal narrative on the application form.

Departmental Honors

A student may earn departmental honors with a GPA of 3.75 in all required courses for the M.A. degree and the recommendation of the department.

Degree Requirements

Candidates for the M.A. in economics must complete a core curriculum that provides training in the fundamental areas of economic theory, quantitative methods, and communication skills. Students then select either the general economics or business economics option.

Required Core Courses

The following courses or their equivalents are required for the M.A. in Economics. Students with previous education in economics or business may waive some of these courses.

Econ 5001, Microeconomic Analysis

Econ 5002, Macroeconomic Analysis

Econ 5100, Econometric Theory and Methods

Electives

Candidates must complete at least 21 hours of electives. A maximum of 6 hours of economics electives may be taken at the 4000 level. With the approval of the graduate coordinator, students may take up to 9 hours of graduate courses outside the Department of Economics. In particular, students interested in business economics may take up to three approved graduate business courses for their electives.

Dual M.B.A./M.A. in Economics

For as few as 15 hours of additional course work in economics, a Master of Arts in Economics may be obtained along with your Master of Business Administration (M.B.A.) degree. Once accepted into the M.B.A. Program, you need only complete an on-page application form to gain admittance to the Economics program as well. Fulltime students can easily complete the M.A. degree in a year's time, while part-time students can be accommodated over a

longer time period. All courses are available during the evening. The following course of study is recommended for dual degree-seekers. It is assumed that students have already completed at least one course in calculus.

I) Core requirements – 12 hours

Econ 5001, Microeconomic Analysis

Econ 5002, Macroeconomic Analysis

Econ 5100, Econometric Theory and Methods

Econ 5140, Seminar in Economic Research (or BA 5100 Managerial Communications)

II) Electives – 18 hours

Twelve hours of graduate-level business electives (excluding BA 5000, BA 5001, and BA 5002, IS 6800 and LOM 5300) to be incorporated from your M.B.A. degree program. Six additional graduate hours in economics, three hours of which may be at the 4000 level.

Applicants need not have an undergraduate degree in economics. However, students are expected to have taken, either at the baccalaureate or M.B.A. level: Intermediate Microeconomics (Econ 3001 or BA 5001), Intermediate Macroeconomics (Econ 3002 or BA 5002), Mathematical Economics (Econ 4150), Money and Banking (Econ 3200), Statistical Analysis for Management Decisions (LOM 5300) and Introductory Econometrics (Econ 4100). Students that do not have these courses will take these courses first; credits earned in these courses do not count towards the hours required for the M.A.

Students must take at least 30 hours to complete the M.A. in Economics degree-core requirements (I) and electives (II) – and these courses must be completed within a period of six years.

Certificate in Forensic Economics

The Certificate in Forensic Economics is a program of study designed for individuals who wish to supplement previous graduate studies with training in the theory and application of forensic economics. The program is aimed at individuals who wish to prepare economic reports and offer expert economic testimony for selected areas of litigation. The entrance requirement is a master's degree in such areas as actuarial science, business administration, finance, economics, or public policy. An applicant must have had prior course work, or its equivalent, in: Intermediate Microeconomics, Intermediate Macroeconomics, and Statistics. Course work in labor economics and law and economics is recommended but not required. Individuals admitted to this certificate program will be nonmatriculating graduate students.

Requirements

The certificate requires a minimum of 18 hours of course work in forensic economics. Students must complete:

Econ 5650, Law and Forensic Economics

Econ 5660, Labor Economics for Forensic Economics

Econ 5670, Assessment of Damages in Personal Injury and Wrongful Death

Econ 5680, Statistical Research in Forensic Economic Analysis

Econ 5690, Writing Reports and Papers on Forensic Economics

Econ 5695, Internship in Forensic Economics

Graduate Certificate in Management Economics

A Graduate Certificate in Managerial Economics is a program of study designed for individuals who wish to supplement previous graduate studies with advanced training in applied economic analysis. The entrance requirement is a master's degree in such areas as business administration, finance, or public policy administration. Individuals admitted to this certificate program will be nonmatriculating graduate students.

Requirements

The certificate requires a minimum of 18 hours of course work in economics. Students must complete:

Business 5001, Microeconomic Analysis

Economics 4100, Introduction to Econometrics

Economics 4030, Managerial Economics

and any two of the following:

Economics 4040, Analysis of Business Cycles

Economics 5020, Economics of Contracts and Organization

Economics 5110, Applied Econometrics

Economics 5130, Business and Economics Forecasting

Economics 6600, Structure and Performance of United States Industry

In addition, the student is required to take an elective (any economics course numbered 5000 or higher). Students with previous experience in economics may be able to substitute for courses previously completed, however, 18 credit hours are required for the Certificate.

Career Outlook

Economics is a language that provides the individual with a concise and logical way to study a wide range of problems and issues. It provides the flexibility for adapting to our ever-changing society, and it is also useful in everyday life. Thus, the economics major is excellent preparation for launching many careers. Economics graduates with a B.A. or B.S. degree pursue careers in banking, industry, and government. They use their training in economics as a foundation for a variety of jobs in management, personnel, sales, and marketing. Others continue their study of economics in graduate schools, earning M.A. and Ph.D. degrees. An undergraduate major in economics also provides a strong background for work on an M.B.A. or law degree. Economics is also important for careers in politics, journalism, and public and private service in foreign countries. Career planning materials are available in the Economics Resource Center, 452 SSB. For additional information, call the Director of Graduate Studies at (314) 516-5553.

Course Descriptions

Courses in this section are grouped as follows: Economics, Geography, and Home Economics.

Prerequisites may be waived by consent of the department.

Students who have earned 24 or more semester hours of credit at any accredited post-secondary institutions(s) before the start of the fall 2002 semester must meet the general education requirements stipulated in the UM-St Louis 2001-2002 Bulletin. The following courses fulfill the Social Sciences breadth of study requirements as described in that Bulletin:

1000, 1001, 1002, 1003, 2010, 2410, 2610, 2800, 3001, 3002, 3052, 3100, 3200, 3300, 3301, 3310, 3320, 3400, 3500, 3501, 3510, 3600, 3620, 3630, 3650, 3700, 3710, 3750, 3800, 3900, 4030, 4040, 4100, 4110, 4130, 4140, 4150, 4160, 4210, 4550, 4610, 4980, 4990, 5110
GEOGRAPHY: 1001, 1002, 2900, 3900

Economics**1000 Introduction to the American Economy (3) [V, SS]**

Introduction to economic analysis and problems through an examination of the development and operations of the American economy; study of its evolution, institutions, and principal problems. Econ 1000 does not substitute for Econ 1001 or 1002. Students who have already completed Econ 1001 or 1002 may not take Econ 1000 for credit.

1001 Principles of Microeconomics (3) [V, SS]

Prerequisite: Mathematics 1030. Introduction to the determinants of household demand, production and cost, and market prices. Applies the principles of individual decision-making behavior to understanding goods, services, and resource markets.

1002 Principles of Macroeconomics (3) [SS]

Prerequisite: Econ 1001. Introduction to the determination of levels of and changes in aggregate income, output, employment, and prices. Applies economic principles of choice to the formulation and achievement of public policies that affect national employment, income distribution, and economic growth.

1003 Microeconomics in the News: A Virtual Classroom (1)

Prerequisites: Econ 1000 or Econ 1001 or equivalent (may be taken concurrently). This course uses a virtual chatroom to host one hour of discussion weekly about current news events with microeconomic content. News articles will focus on business, public policy, and individual choices that can be understood within a microeconomics framework. Chatroom can be accessed from any location-on or off-campus-within Internet access.

1004 Macroeconomics in the News: A Virtual Classroom (1)

Prerequisites: Econ 1002 or equivalent (may be taken currently). This course uses a virtual chatroom to host one hour of discussion, weekly, about current news events with macroeconomic content. News articles will focus on macroeconomic phenomena – e.g., interest rates, the global economy, the Federal Reserve and public policy decisions – that can be understood within a macroeconomics framework. Chatroom can be accessed from any location – on or off – campus – with Internet access.

1500 Entertainment Economics: The Movie Industry (3) [SS]

This survey course examines the interrelationships between economics and the movie industry. It explores the impact of economic factors on the production, distribution and exhibition of movies, focusing on the rise and fall of the studio system, role of technological change in the evolution of cinematography and the movie marketplace, financing and market segmentation, globalization and changing industrial structure within which films are produced. To the extent that movies reflect and contribute to popular economic perspectives, this course also evaluates the soundness of the movie industry's depiction of a variety of economic doctrines. Classes will consist of lecture, discussion, and brief film screenings. This course does not count towards the hours required for an Economic major.

1510 Entertainment Economics: The popular Music Industry (3) [SS]

This survey course examines the interrelationship between economics and the music industry. It explores the impact of economics factors on the production, distribution of music, payola, and the rise and fall of the independent labels, the role of technological change in the evolution of music industry, globalization and changing industrial structure within which CDs are produced. To the extent that music reflects and contributes to popular economics perspectives, this course also evaluates the soundness of the music industry's depiction of a variety of economic doctrines. Classes will consist of lecture, discussion, and brief listening sessions. This course does not count towards the hours required for an Economics major.

2010 The Business Firm: History, Theory, and Policy (3) [V, SS]

Prerequisites: Econ 1000 or 1001 or consent of instructor. This course presents a history of development of modern business firms and examines the evolution of the economic theory of the firm. Special attention paid to the role that firms play in fostering social and economic development. Objective of course is to provide students with deeper understanding of firms so that they can make better policy decisions as owners, managers, lawmakers, regulators, and voters.

2410 Work, Families, and Public Policy (3)

Prerequisite: Econ 1000 or 1001. Same as WGS 2410. This course compares the economic behavior of women and men in both the labor market and the household. Topics include: the family as an economic (production) unit, gender differences in labor force participation, occupations and earnings; the effectiveness of human capital theory and labor market discrimination in explaining the male-female wage gap; remedies for reducing the wage gap; family structure and economic well-being; and alternative policies to alleviate poverty.

2610 The Economics of Professional Sports (3) [V, SS]

Prerequisite: Econ 1000 or equivalent or consent of instructor. This course will survey the economic organization of professional sports team industries and the relationship of sports teams to their employees, fans, and governments. Economic issues relating to salaries and labor disputes, monopoly practices, cartels and pricing, team location decisions, and public subsidies for professional sports teams will be analyzed.

2650 Law and Economics (3)

Prerequisite: Econ 1001. Analysis of the economic role of property rights and contracts in the private for-profit and not-for-profit sectors of the economy. Considers economic incentives to form organizations as one alternative and to form contracts as another. Considers the economic efficiency of the common law and judicial systems in use in the United States.

2800 History of American Economic Development (3) [MI, SS]

Prerequisites: Econ 1000 or 1001 or consent of instructor. Same as Hist 2800. Uses economic concepts to explain historical developments in American economy, beginning with hunter-gatherers who crossed the Bering land bridge around 12,000 B.C. Main topics include Native American economies, European exploration and conquest, colonial economies, indentured servitude, American Revolution, U.S. Constitution, westward expansion, transportation, Industrial Revolution, state banking and free banking, slavery, Civil War, post-bellum agriculture, rise of big business and antitrust, banking panics, Federal Reserve Act, First and Second World Wars, New Deal, and growth of government in postwar economy.

3001 Intermediate Economic Theory: Microeconomics (3)

Prerequisites: Econ 1001 and 1002. Analysis of prices in terms of equilibrium of the business firm and consumer demand in markets of varying degrees of competition.

3002 Intermediate Economic Theory: Macroeconomics (3)

Prerequisites: Econ 1001, 1002; Econ 3200 is recommended. Study of national income, expenditure, and the forces determining the level of economic activity. Special emphasis on the theory of income determination and its application to public policy.

3052 Microeconomics for the School Curriculum (1-3)

Prerequisite: Junior standing. Analysis of market forces, with emphasis on business firms, households, and productive-factor markets, price determination, and resource allocation. Special reference to topics included in elementary and secondary school social science curricula. Econ 3052 may not be used by economics majors to meet degree requirements.

3055 Economics Issues for the School Curriculum (3)

Prerequisites: Junior standing and consent of instructor. An analysis of selected economic issues appropriate to instruction in secondary and elementary schools. May be taken more than once for credit, provided the topic of the course is different each time. May not normally be used by economics majors to meet degree requirements. This course does not fulfill the undergraduate economics requirement for education majors.

3100 Economic Statistics (3)

Prerequisites: Math 1030, Econ 1001, and Econ 1002. Introduction to economic data sources, data interpretation and statistical inference as used in economic analysis. Emphasizes the testing of economic hypotheses and the development and estimation of economic models. Introduces the use of statistical software used in economics.

3200 Money, Banking, and Monetary Theory (3)

Prerequisites: Econ 1001 and 1002. Factors influencing bank reserves and the money supply. Ability of the Federal Reserve System and the Treasury to control these factors. Introduction to monetary theory; integration of monetary phenomena with national income theory. Analysis of current policy issues.

3300 International Economic Analysis (3)

Prerequisite: Econ 1001. Introduction to the theories of international trade and factor movements including determinants of trade, the effects of trade on sectors and on overall economic performance, trade restrictions, and balance of payments and exchange rates. Discussion of current institutions and economic developments in the global economy.

3301 International Finance (3)

Prerequisite: Econ 1002. Introduction to international monetary systems; foreign exchange markets; financing of international transactions; the international position of the dollar.

3310 Comparative Economic Systems (3)

Prerequisite: Econ 1001, or 1002. Introduction to the comparative study of economic organization, growth, and welfare in different types of national economies such as the United States, the United Kingdom, France, Germany, Sweden, Japan, the republics of the former Soviet bloc, and China.

3320 Economic Development (3)

Prerequisites: Econ 1001 and 1002. Survey of economic growth as applied to developed and underdeveloped countries. Analysis of development policies with emphasis on case studies. Case studies may include the United States, Western Europe, or Latin America.

3400 Labor Economics (3)

Prerequisite: Econ 1001. Examines the labor market in the economy. Considers the theories of labor supply, labor demand, and market determination of wages. Other topics include noncompetitive markets, internal labor markets, the theory of human capital, compensating wage differentials, labor market discrimination, unions and collective bargaining, unemployment, and poverty and the distribution of income.

3500 Public Finance: Expenditures (3)

Prerequisite: Econ 1001. Analysis of public goods and externalities, models of collective choice, elements of benefit-cost analysis, the theory of bureaucracy, governments as agents in markets.

3501 Political Finance: Revenues (3)

Prerequisite: Econ 1001. Analysis of the economic role of governments, subsidies and taxes in the federal system, criteria for tax evaluation, the nature of tax legislation, private decision making under differing tax institutions, and government borrowing.

3600 Industrial Organization (3)

Prerequisite: Econ 1001. A theoretical and empirical analysis of the actions of firms under alternative forms of market organization. The role of economics of scale, product differentiation, mergers, and advertising in affecting industry structure, and the impact of the resulting industry structure on pricing, output, promotion, and technology decisions of firms.

3620 Business and Government (3)

Prerequisite: Econ 1001. Relations between business firms and government at all levels. Questions of regulation, public ownership, guidelines, and competition considered.

3630 Government Regulation and Antitrust Policy (3)

Prerequisite: Econ 1001. Evaluation of the use of antitrust policy and government regulatory agencies to improve the performance of industrial markets. Course will include discussion of antitrust cases and analysis of the economic impact of deregulatory initiatives in the airline, trucking, railroad, and telecommunications industries.

3700 Urban and Regional Economics (3)

Prerequisites: Econ 1001 and 1002. A survey of factors affecting the location of economic activity, industrial diversity, determinants of urban growth, the role of urban public economy, and the management of the urban environment.

3710 Planning Processes in the Urban Economy (3)

Prerequisites: Econ 1001 and junior standing. Economic techniques and criteria used in planning and evaluating programs and projects for the urban economy.

3750 The Political Economy of Health Care (3)

Prerequisite: Econ 1001. The course provides an economic perspective on the working of the health care market, focusing on the effects of government regulation, tax policy, and entitlement programs. There will be a detailed review of existing U.S. health care financing programs (e.g., Medicare, Medicaid), as well as financing systems of other developed countries. Health care policy will be evaluated according to its impact on quality, cost, and access to medical care and, ultimately, the overall health status of our population.

3800 History of Economic Thought (3)

Prerequisites: Econ 1001 and 1002. The evolution of economic thought from the ancients through post-Keynesian theory.

3900 Selected Topics in Economics (3)

Prerequisites: Econ 1001 and 1002. Analysis of a selected economic topic. The topic selected will vary from semester to semester. This course may be taken for credit more than once as long as the topic discussed in each semester is different.

4030 Managerial Economics (3)

Prerequisite: Econ 3001 or equivalent; Math 1800 or 1100 recommended. Application of microeconomic theory to decision-making process in the business firm. Topics include pricing and profit strategy, cost analysis, decision making under uncertainty, technology, innovation, and productivity growth, and the structure and organization of firms. Problem-solving and case-study approach used.

4040 Analysis of Business Cycles (3)

Prerequisites: Econ 3200; 3002; 3100. This course focuses on the empirical regularities in macroeconomics commonly referred to as the business cycle. It examines the variability and co-movements of aggregate economic variables and explores alternative theoretical explanations of these phenomena.

4100 Introduction to Econometrics (4)

Prerequisites: Econ 1001 and 1002; Econ 3100 Math 1800 or Math 1100; or consent of instructor. An introduction to quantitative analysis of economic behavior. The ordinary least squares technique and the assumptions underlying it are developed. Methods designed to detect and correct for the violations of these assumptions are examined. Special emphasis is given to the practical application of the procedures discussed through the use of computer exercises.

4105 Quantitative Methods and Modeling in Economics, Business and the Social Sciences (3)

Prerequisites: Math 1030; Econ 1001 or junior standing. This course focuses on the application of mathematical techniques

to model building. The course reviews various mathematical techniques and shows students how they can be used for describing various social and business phenomena. Specific examples from the business, economics, criminology and other social sciences will be employed to reinforce the mathematical tools and concepts discussed. Students who have previously completed Econ 4150 or Math 1800 or Math 1100 may not take this course for credit.

4110 Applied Econometrics (4)

Prerequisite: Econ 4100 or equivalent. Concepts, techniques, and advanced applications of econometrics. Emphasis on developing a critical understanding of the appropriateness and limitations of a variety of state-of-the-art techniques used to model economic or political processes. Topics will include joint tests of hypotheses, estimation of lagged effects, models of qualitative choice, simultaneous systems, and outlier diagnostics. This course includes laboratory work in quantitative economic analysis.

4120 Time Series Econometrics for Economics and Finance (4)

Prerequisites: Econ 4100 or equivalent and a solid foundation in statistics. Introduction to application of econometric methods to time-series data. Emphasis on model specification as it applies to macroeconomic or financial data. Topics include: Stationary and non-stationary time-series, seasonality, random walks, unit roots, Dickey-Fuller tests, cointegration, ARCH/GARCH models, and general to specific modeling (ADLs). Specific applications to macro-economics, international economics and/or financial markets.

4130 Business and Economic Forecasting (4)

Prerequisite: Econ 4100 or equivalent. Alternative forecasting methodologies for economic time series will be analyzed and discussed. The focus of the course will be: (1) the development of time-series (ARIMA) models and their application to forecasting; (2) the use of standard econometric models for forecasting; and (3) evaluation and comparison of these methods and the conditions under which each is the appropriate methodology. This course includes laboratory work in quantitative economic analysis.

4150 Mathematical Economics (3)

Prerequisites: Math 1800 or 1100, Econ 3001, or BA 5000 or 5001. This course uses calculus and other mathematical tools to analyze economic phenomena. In addition to exploring techniques used to solve unconstrained and constrained optimization problems, the course also examines how matrix algebra is used in economic modeling. This course allows students to mathematically analyze economic models which receive graphical treatment in lower level courses.

4160 Geospatial Analysis in the Social Sciences (3)

Prerequisites: Junior standing. Econ 1001 or consent of instructor. Analysis of geospatial data relating to a variety of social phenomena using geographic information systems (GIS) software. Students will learn how geospatial analysis

can be integrated into research projects and presentations (e.g., creating maps to present and analyze social, political and economic data). Students will also learn how criminal activity, economic activity, voting patterns and other social behavior are spatially correlated with demographic data. As a culminating project, students will learn how to apply GIS techniques, including but not limited to sophisticated spatial modeling of social behavior.

4170 Fundamentals of Cost-Benefit Analysis (3)

Prerequisites: Econ 3001 or equivalent. The purpose of this course is to provide a systemic and rigorous way of thinking about the measurement of benefits and costs when evaluating public projects, programs or regulations. Cost-benefit analysis has wide application, including: environmental resource use, highway construction projects, safety regulations, taxation of cigarettes, and investment in higher education. Given the prevalence of cost-benefit analysis in government budgetary processes, this course will develop critical appraisal skills to evaluate the appropriateness of these analyses.

4210 Financial Markets and Institutions (3)

Prerequisite: Econ 3200. Demand, supply, and flow of funds in the macrofinancial system, including money, capital, futures, and foreign exchange markets. Examines types and historical development of domestic and international financial intermediaries operating within these markets, decision-making within individual intermediaries, their regulatory environment, and how their portfolio decisions affect flows in the financial system.

4510 Public Finance: State and Local (3)

Prerequisites: Econ 1001 and 1002 and junior standing. A study of expenditure, taxation, and financial administration of state and local governments, with emphasis on problems of current interest. Special attention given to research methods, as well as financial relations between various levels of government.

4550 Natural Resource Economics (3)

Prerequisite: Econ 1001, or consent of instructor, junior standing. The relationship between human activity and the world's natural resources requires choices. This course uses an economics perspective to study these choices. This perspective uses the view of the environment as an asset for its starting point. Issues concerning the optimal and sustainable use of natural resources are examined in this context. Special emphasis is given to potential policy responses to environmental problems.

4610 Economics of Nonmarket Decision Making (3)

Prerequisites: Econ 1001 or consent of instructor; junior standing. Application of economic theory and methodology to study of nonmarket decision making. Introduction to economic models of the judiciary, bureaucracies, interest groups, regulatory agencies, legislative and executive branches of government, and private nonprofit charitable

organizations. Impact of voting rules and agenda manipulation on collective outcomes will be explored.

4720 The Economics of Real Estate and Land Use Policy (3)

Prerequisites: Econ 3001 and Econ 4100. This course will introduce economic theory and analysis of the real estate market's micro and macro characteristics. Public policy impacting both the residential and commercial property markets will be discussed using the models developed in the course. Topics include price and location theory, growth and growth patterns, urban sprawl, migration, regulation of land and capital, provision of public goods, and non-market valuation econometric modeling. Hands on applications of various non-market econometric models will be provided.

4900 Advanced Topics in Economic Analysis (3)

Prerequisites: Econ 3001 or 3002 or consent of instructor. Study of a specific topic in Economics that may vary from semester to semester. May be taken for credit more than once if the topics are different.

4980 Special Readings (1-6)

Prerequisites: Consent of instructor; grade point of 3.0 or higher in economics. Unscheduled, independent directed readings on topics mutually acceptable to student and instructor. Maximum credit limited to six hours.

4990 Internship in Applied Economics (2-6)

Prerequisites: Junior standing, Econ 3001, and consent of instructor. Independent study involving work with appropriate private firm or public agency. Maximum of 6 hours may be earned, only 3 of which may be applied to economics major.

5001 Microeconomic Analysis (3)

Prerequisites: Econ 3001 or BA 5001; Econ 3002 or BA 5002; Econ 4150. Survey of microeconomic comparative statistics. Detailed examination of demand and supply, product, and factor markets. Partial equilibrium in competitive, imperfectly competitive, and monopolistic markets.

5002 Macroeconomic Analysis (3)

Prerequisites: Econ 3200; Econ 3001 or BA 5001; Econ 3002 or BA 5002; Econ 4150. Aggregate economic theory, including analysis of the determinants of income, output, employment, and prices. Employment and price-level effects of consumer and investment demand, the money supply and interest rates, and government policies.

5010 Microeconomics for Policy Analysis (3)

Prerequisites: Graduate Student Standing. Same as PPA 6080. This course introduces microeconomic analysis of consumers, firms, and government, with an emphasis on policy applications. It assumes no prior training in economics and is appropriate for graduate students in public policy administration, nonprofit management, political science, gerontology, criminology and criminal justice, and other

related fields. This course may not be used by economics students to meet M. A. degree requirements.

5020 Economics of Contracts and Organization (3)

Prerequisites: Econ 3001 or BA 5001 or 5000. Considers issues in the coordination of human resources in the production of goods and services, either through individual contracting or through various forms of organizations. Organization is explained as a nexus of contractual relationships within a cooperative production unit, whether that unit is governmental, in private commerce, or has a nonprofit orientation-or some mix of the three basic modes. Emphasizes the roles of transactions costs, bounded rationality, monitoring individual performance in team production, opportunism, basic principles of insurance, and other incentive compatibility issues.

5051 Macroeconomics for the School Curriculum (1-3)

Prerequisite: Junior standing. Analysis of forces affecting the national economy, with emphasis on income determination, employment, money and banking, and international trade and finance. Special reference to topics included in elementary and secondary school social science curricula. Econ 5051 may not be used by economics majors to meet degree requirements.

5052 Microeconomics for the School Curriculum (1-3)

Prerequisite: Bachelor's degree from an accredited institution or consent of instructor. Analysis of market forces, with emphasis on business firms, households, productive factor markets, price determination and resource allocations. Special reference to topics included in the elementary and secondary school social science curricula.

5055 Economic Issues for the School Curriculum (1-3)

Prerequisites: Junior standing and consent of instructor. An analysis of selected economic issues appropriate to instruction in secondary and elementary schools. May be taken more than once for credit, provided the topic of the course is different each time. May not normally be used by economics majors to meet degree requirements.

5100 Econometric Theory and Methods (3)

Prerequisites: Econ 3001 or BA 5001; Econ 3002 or BA 5002; Econ 4150; Econ 4100 or LOM 5300; Math 2450 or equivalent. A rigorous review of statistical models and methods relevant to the estimation and testing of economic relationships. Emphasis on the theoretical underpinnings of techniques commonly used for single and multiple equation estimation and hypothesis testing. Topics include ordinary and generalized least squares, robust regression, and simultaneous equations estimation.

5110 Topics in Applied Econometrics (3)

Prerequisites: Econ 4100, or Econ 5100 or LOM 5300; Math 2450 or equivalent. Concepts and application of advanced econometric techniques. Students will develop a thorough understanding of the appropriateness and application of a variety of state-of-the-art techniques. Topics will include

specification tests, polynomial distributed lags, discrete choice, pooled time-series cross-section, simultaneous equations and outlier detection.

5120 Advanced Topics in Time Series Econometrics (3)

Prerequisites: Econ 4100 or equivalent and a solid foundation in statistics. Application of econometric methods to time-series data. Emphasis on model specification as it applies to macroeconomic or financial data. Advanced Topics include: Stationary and non-stationary time-series, seasonality, random walks, unit roots, Dickey-Fuller tests, cointegration, ARCH/GARCH models, and general to specific modeling (ADLs). Specific applications to macro-economics, international economics and/or financial markets.

5130 Advanced Topics in Business and Economic Forecasting (3)

Prerequisites: Econ 3001 or BA 5001, Econ 3002 or BA 5002, Econ 4150, Econ 4100 or MS/IS 5300. This course develops the alternative techniques which are used to forecast economic time series. Each forecasting technique will be evaluated in terms of its theoretical soundness and predictive track record. Students will also learn to use these techniques to differentiate among competing economic models.

5140 Seminar in Economic Research (3)

Prerequisites: Econ 3200; Econ 3001 or BA 5001; Econ 3002 or BA 5002. Research methods applied to economics. Develops efficiency and skill in conducting research and communicating the results with written reports and oral presentations. This course must be taken within the first year of study after completion of the prerequisites.

5200 Monetary Theory and Policy (3)

Prerequisites: Econ 3200; Econ 3001 or BA 5001; Econ 3002 or BA 5002; Econ 4150. An examination of how monetary policy has affected the economy in the past and how it can improve economic performance in the future. Topics include: the origins of money, money supply, money demand, the determinants of real and nominal interest rates, the term structure of interest rates, the impact of discretionary monetary policy on the domestic economy and foreign exchange markets, and the domestic economy and foreign exchange markets, and the relationship between monetary policy and federal government deficits.

5210 Financial Markets (3)

Prerequisites: Econ 3200; Econ 3001 or BA 5001; Econ 3002. Demand, supply, and flow of funds in allocating credit and distributing risk in the macrofinancial system. The saving investment process, the rationale for financial markets, and the role of financial intermediaries are studied within the framework of the flow of funds accounts. Special attention is given to the operation of money, capital, futures, and foreign financial markets and the impact of public policy on the structure and performance of financial markets.

5300 International Trade (3)

Prerequisite: Econ 3001 or BA 5001. Survey of the modern theories of international trade and their applications including factor endowments and other, trade restrictions, foreign investment, trade and economic development, and balance of payments and exchange rates. Discussion of current institutions and economic developments in the global economy.

5301 International Monetary Analysis (3)

Prerequisite: Econ 3200, Econ 3002 or BA 5002. Application of macroeconomic theory to the international monetary system. Topics include the balance of payments, exchange rates, international linkages, world inflation, capital flows, and the gold standard.

5400 Labor Economics: Theory and Public Policy (3)

Prerequisite: Econ 3001 or BA 5001. This course examines labor supply, labor demand, and market determination of wages. Topics covered include the effect of technological change on employment, trends in labor force participation, the impact of government taxes and transfers on labor supply, poverty, and its economic consequences, the human capital model and its implications for investment in education and on-the-job training, and theories of economic discrimination and empirical measurement issues. Throughout the course, current public policy debates are examined using the theoretical models developed.

5500 Public Sector Microeconomics (3)

Prerequisite: Econ 3001 or BA 5001, or PPA 6080. Same as PPA 6210. Application of tools of intermediate microeconomics to address public sector issues. Special emphasis is placed on critically analyzing current public policy debates using the models developed. Topics covered include: cases in which competitive market fails to allocate resources efficiently (e.g., externalities and public goods), importance of property rights, incentive effects of the tax and transfer system, and the fundamentals of cost-benefit analysis.

5600 Structure and Performance of United States Industry (3)

Prerequisites: Econ 3001 or BA 5001; Econ 4150. An analysis of the functioning of business firms under alternative market arrangements. Topics include: the theory and measurement of monopoly power and the role of economies of scale, product differentiation, and entry conditions in affecting this power; the impact of market power on the price-setting behavior, advertising and promotional strategies, and technological innovation of firms; the role of government policy in promoting or preventing competition among firms.

5630 Economics of Telecommunications (3)

Prerequisites: Econ 3001, BA 5000 or BA 5001 and Econ 4150. Application of economic theory and techniques to the telecommunications industry. Topics include demand theory for telephone access and use, consumer surplus models for

subscription choice, nonlinear pricing strategies including pure and mixed bundling and multi-part tariffs, the incentives of the firm under various regulatory regimes, a comparison of rate-of-return regulation and incentive (price cap) regulation, and the impact of carrier-of-last-resort responsibilities.

5640 Transportation Economics (3)

Prerequisites: Econ 3301 or BA 5000. This course makes use of range of economic concepts to examine the nature of markets in which transport services are provided. This course is designed for future transportation professionals who wish to explore the fundamentals of economics in their field and for graduate students in public policy and economics wishing an economics-based understanding of transportation issues. Basic concepts covered include the theory of transportation demand, transportation costs and investment planning, and current topics in transportation economics such as regulation-deregulation and social cost pricing.

5650 Law and Forensic Economics (3)

Prerequisites: Econ 3001, 3002, 3100, or equivalent, or consent of instructor. Reviews issues of law that dictate conditions under which forensic economic analysis is admissible. Topics include introduction to common law, federal and state court systems, statutory basis for wrongful death damages, "make, differences by class of litigation, determination of whole" principle, efficient deterrence and efficient compensation relevant law, legal implications of "preferred jury instructions," standards for admissibility of economic expertise.

5660 Labor Economics for Forensic Economists (3)

Prerequisites: Econ 3001, 3002, 3100, or equivalent; or consent of instructor. Focuses on areas of labor economics of special importance in forensic economic analysis. Topics include human capital as a recoverable asset, age-earnings cycles, variations in age-earnings cycles, earning capacity versus expected earnings, theories of family and family bargaining, theory of discrimination and tests for presence of discrimination.

5670 Assessment of Damages in Personal Injury and Wrongful Death (3)

Prerequisites: Econ 3001, 3002, 3100, or equivalent; or consent of instructor. Reviews methodologies for standard damage categories in forensic economic analysis. Topics include methods for establishing base earnings, use of age-earnings profile data, discount rates, net discount rates and stability of relationship between wage growth and discount rates, analysis of fringe benefit packages, concepts and measurement of nonmarket family services, hedonic damage controversy, analysis of personal consumption/personal maintenance for wrongful death cases.

5680 Statistical Research in Forensic Economic Analysis (3)

Prerequisites: Econ 3001, 3002, 3100, or equivalent; or consent of instructor. Review of relevant statistical techniques, data sources, and reliability factors. Since factual information about individual tort victims is often limited in forensic economic assessment, this course deals extensively with issues of inference that must be made with little data. Also addresses issues of scientific admissibility and Internet as a potential source of relevant data.

5690 Writing Reports and Papers in Forensic Economics (3)

Prerequisites: Econ 3001, 3002, 3100, or equivalent; or consent of instructor. A professional writing course in which students are expected to prepare both a report suitable for litigation and a paper written in publication format for a professional journal or law review. Some student papers will be publishable in specialized journals, legal publications, and law reviews.

5695 Internship in Forensic Economics (3)

Prerequisites: Econ 3001, 3002, 3100 or equivalent; or consent of instructor. Internship with litigation division in law or accounting practice, or with forensic consulting firm. Internship activities and products will be monitored largely through Internet interaction between student and faculty.

5700 Regional and Urban Economics (3)

Prerequisites: Econ 3001. Investigate the spatial aspects of urban and regional economics: location theory, market areas, and agglomerations. The focus is on the description and explanation of the spatial allocation of economic activity with particular attention paid to the role of cities. Topics will include regional development and regional development strategies, the growth of cities, firm location decision, spatial externalities, sprawl, and firm location.

5720 Real Estate Economics (3)

Prerequisites: Econ 3001 and Econ 4100. This course will introduce economic theory and analysis of the real estate market's micro and macro characteristics. Public policy impacting both the residential and commercial property markets will be discussed using the models developed in the course. Topics include price and location theory, growth and growth patterns, urban sprawl, migration, regulation of land and capital, provision of public goods, and non-market valuation econometric modeling. Hands-on applications of various non-market econometric models will be provided.

5750 The Political Economy of Health Care (3)

Prerequisite: Econ 3001 or BA 5000 or consent of instructor. This course investigates the impact of government policy on health care provision and financing, focusing on the effect of entitlement programs, tax policy, and government regulation. Applying standard economics techniques, students will analyze incentives facing the decision makers in the health care system and ways in which they are altered by government policy. Attention will also be given to rationales

for government intervention and roles of interest groups in the formulation of U.S. health care policy. The course will provide a detailed review of specific federal and state government financing programs, primarily focusing on Medicare and Medicaid, and will include discussion of the economic aspects of current health finance reform proposals.

5760 Health Economics (3)

Prerequisites: Econ 3001 or BA 5001. This course applies microeconomic theory and statistical techniques to understand decision making in health care markets. The effects of government policies on the health care choices of consumers and providers are identified and quantified; attention is given to federal and state entitlement programs, regulations, tax policies and antitrust enforcement. The role of insurance as a risk-sharing device is explored, along with its implications for pricing and health care utilization.

5900 Advanced Topics in Economic Analysis (3)

Prerequisite: Consent of the instructor. Study of a specific economics topic, which may vary from semester to semester. May be taken more than once if the topic is different.

5980 Directed Readings (1-6)

Prerequisite: Consent of instructor. Independent study through readings, reports, research projects, and conferences.

Geography

1001 Introduction to Geography (3) [MI, SS]

Prerequisite: None. An introduction to geography as a social science. The identification and explanation of order in the human landscape. A survey of the social, political, economic, and psychological factors which influence geographic patterns.

1002 World Regions (3)

Prerequisite: None. Survey of the major regions of the world. Designed to give the student an awareness of the character of each of these major regions through the interrelationships of the various attributes of place. Each semester the geographic perspective will be applied in greater depth to one significant country such as Afghanistan, Iraq, or North Korea.

2900 Special Readings in Geography (3)

Prerequisite: Consent of instructor. This course will provide a more in-depth analysis of the various factors which influence geographic patterns. The topic selected will vary from semester to semester. This course may be taken for credit more than once as long as the topic discussed in each semester is different.

3900 Advanced Topics in Geography (3)

Prerequisites: Junior standing or consent of instructor. Analysis of selected geography topics. The topics selected will vary from semester to semester. This course may be taken for credit more than once as long as the topics discussed in each semester are different.

Home Economics

1110 Nutrition in Health (3)

A study of dietary nutrients essential for health, proper selection of foods to provide them, and current issues affecting them.

Department of English**Faculty**

Barbara A. Kachur, Professor*
Ph.D., The Ohio State University
Chairperson

David Carkeet, Professor Emeritus*
Ph.D., Indiana University

Joseph Carroll, Professor*
Ph.D., University of California-Berkeley

Sylvia J. Cook, Professor*
Ph.D., University of Michigan

Charles Dougherty, Professor Emeritus
Ph.D., University of Toronto

Sally Barr Ebest, Professor*
Ph.D., Indiana University

Howard Schwartz, Professor*
M.A., Washington University

James E. Tierney, Professor Emeritus
Ph.D., New York University

Eamonn Wall, Jefferson Smurfit Professor
Of Irish Studies and Professor
Ph.D., City University of New York

Peter Wolfe, Professor, Curators' Professor*
Ph.D., University of Wisconsin

Jane Zeni, Professor*
Ed.D., University of Missouri-St. Louis

Deborah Aldrich-Watson, Associate Professor*
Ph.D., Columbia University

Richard M. Cook, Associate Professor*
Ph.D., University of Michigan

Suellynn Duffey, Associate Professor
Ph.D., The Ohio State University

Kathy Gentile, Associate Professor*
Ph.D., University of Oregon

Francis Grady, Associate Professor*
Ph.D., University of California-Berkeley

Bruce L. Liles, Associate Professor Emeritus
Ph.D., Stanford University

Steven Schreiner, Associate Professor*
Ph.D., Wayne State University

Nanora Sweet, Associate Professor*
Ph.D., University of Michigan

Jane Williamson, Associate Professor Emerita
Ph.D., Bryn Mawr College

Mary Troy, Associate Professor*
M.F.A., University of Arkansas

John Dalton, Assistant Professor
M.F.A., University of Iowa

Tivoli Majors, Assistant Professor*
Ph.D., University of Texas at Austin

Nancy Robb Singer, Assistant Professor
M. Ed., University of Missouri-Columbia

Allison, Jeanne, Lecturer
M.A., University of Missouri-St. Louis

Ellie Chapman, Senior Lecturer Emerita
M.A., Murray State University

Susan Grant, Senior Lecturer
M.A., Southern Illinois University-Edwardsville

Nancy Gleason, Senior Lecturer
M.A., University of Missouri-St. Louis

Judy Gurley, Senior Lecturer Emerita
M.A., University of Arkansas

William Klein, Senior Lecturer
Ph.D., Michigan Technological University

Judith Linville, Senior Lecturer Emerita
M.A., University of Arkansas

Jennifer MacKenzie, Senior Lecturer
M.A., Purdue University

Terence Martin, Senior Lecturer Emeritus
Ph.D., Southern Illinois University-Carbondale

William Mayhan, Senior Lecturer
Ph.D., Washington University

Scott McKelvie, Senior Lecturer
M.A., University of Missouri-St. Louis

Lyman Peters, Lecturer
M.A., University of Missouri-St. Louis

David Rota, Senior Lecturer
Ph.D., Southern Illinois University-Carbondale

Barbara Van Voorden, Senior Lecturer
M.A., Washington University

Lynn Staley, Lecturer
Ph.D., St. Louis University

*members of Graduate Faculty

General Information**Degrees and Areas of Concentration**

The English department offers or participates in offering the B.A. in English, the B.A. in English with certification for secondary teaching, and the B.S. in secondary education with an emphasis area in English. The department also offers a minor in English. Additionally, students with any major in the university may earn a Certificate in Writing so that they may demonstrate evidence of training in creative, journalistic, or technical writing.

The department has a graduate program leading to the master of arts degree. Students may pursue a literature track where they acquire a broad coverage in British and American writers or a writing track where half of the course work deals with composition and writing theory. The department also offers the master of fine arts in creative writing, in which half of the courses are writing workshops and independent writing projects. In addition, the department of English participates in a Graduate Certificate in the Teaching of Writing.

Departmental Honors

Candidates for departmental honors in English must achieve a 3.2 average in English at graduation and complete an undergraduate or graduate seminar in English, the final paper for which must be acceptable to the instructor as an honors thesis.

Undergraduate Studies

General Education Requirements

English courses may be used to meet the university's humanities requirement, **except** the following:

1100, Freshman Composition
1110, Freshman Composition for International Students
2120, Topics in Writing
2810, Traditional Grammar
3090, Practical Criticism: Writing About Literature
3100, Advanced Expository Writing
3110, Advanced Expository Writing for International Students
3120, Business Writing
3130, Technical Writing
3140, News Writing
3150, Feature Writing
3160, Writing in the Sciences
3180, Reporting
4000, Writing in the Professions
4860, Editing
4870, Advanced Business and Technical Writing
4880, Writing for Teachers
4885, The Curriculum and Methods of Teaching English
4890, Independent Writing Project

The college's foreign language requirement may be met in any language.

Satisfactory/Unsatisfactory Option

A maximum of 6 satisfactory/unsatisfactory hours may be taken in the department. Majors must complete at least 18 graded (i.e., not satisfactory/unsatisfactory) hours in English courses at the 3000 level or above with a grade point of 2.0 or better in these courses.

English majors may take any English course on a satisfactory/unsatisfactory basis except the following:

1100, Freshman Composition
1110, Freshman Composition for International Students
3090, Practical Criticism: Writing About Literature
3100, Advanced Expository Writing
3110, Advanced Expository Writing for International Students
3120, Business Writing
3130, Technical Writing
3140, News Writing
3150, Feature Writing
3160, Writing in the Sciences
3180, Reporting
4000, Writing in the Professions
4860, Editing
4870, Advanced Business Writing
4880, Writing for Teachers
4885, The Curriculum and Methods of Teaching English
4890, Independent Writing Project

Degree Requirements

Bachelor of Arts in English

English majors must complete at least 36, but no more than 45, hours in English exclusive of Eng 1100, Freshman Composition; Eng 1110, Freshman Composition for International Students; and Eng 3090, Practical Criticism: Writing About Literature.

1) Students majoring in English must take:

2310, English Literature I
2320, English Literature II
2710, American Literature I
2720, American Literature II
2810, Traditional Grammar--or test out

2) English 3090, Practical Criticism: Writing About Literature. (For English majors, this course is a prerequisite or corequisite for 4000-level courses in English.)

3) Students must also complete one course from five of the following 10 areas:

Area 1 Medieval English

4250, Old English Literature
4260, Chaucer
4270, Medieval English Literature

Area 2 Shakespeare

4370, Shakespeare: Tragedies and Romances
4380, Shakespeare: Comedies and Histories

Area 3 The Renaissance

4320, Elizabethan Poetry and Prose
4340, Early Seventeenth-Century Poetry and Prose
4350, Milton
4360, Tudor and Stuart Drama

Area 4 Restoration and Eighteenth-Century English

4410, Restoration and Eighteenth-Century Drama
4420, Age of Dryden and Pope
4440, Age of Johnson
4450, The Eighteenth-Century English Novel

Area 5 Nineteenth-Century English

4510, Early Romantic Poetry and Prose
4520, Later Romantic Poetry and Prose
4540, The Nineteenth-Century English Novel
4560, Prose and Poetry of the Victorian Period
4580, Literature of the Late Nineteenth and Early Twentieth Centuries

Area 6 Nineteenth-Century American

4610, Selected Major American Writers I
4620, Selected Major American Writers II
4630, African American Literature Prior to 1900
4640, American Fiction to World War I

Area 7 Twentieth-Century English/American

- 4650, Modern American Fiction
4660, African American Literature Since 1900
4740, Poetry Since World War II
4750, Modern British Fiction
4760, Modern Drama
4770, Modern Poetry

Area 8 Literary Criticism

- 4000, History of Literary Criticism
4030, Contemporary Critical Theory
4050, Forms and Modes of Poetry
4070, The Two Cultures: Literature and Sciences
4080, Narrative, Cognition, and Emotion

Area 9 Special Topics

- 4060, Adolescent Literature
4900, Seminar
4910, Studies in African/African American Literature, Criticism, and Diaspora
4920, Major Works of European Fiction
4930, Studies in Women and Literature
4940, Special Topics in Jewish Literature
4950, Special Topics in Literature
4960, Ethnic Literatures

Area 10 Linguistics

- 4800, Linguistics
4810, English Grammar
4820, History of the English Language

Work in 2000-level courses provides background in literary history and forms, as well as the means for discussing literary issues, on paper and orally. Thus, the department requires Eng 2310 or consent of the instructor as a prerequisite for all courses in Areas 1-4 and Eng 2320 or consent of the instructor as a prerequisite for all courses in Areas 5 and 7, except American literature courses. Eng 2710 or consent of the instructor is a prerequisite for all courses in Area 6, and both Eng 2710 and Eng 2720 or consent of the instructor are prerequisites for Eng 4650. All survey courses (Eng 2310, 2320, 2710, and 2720) must be taken before the major has completed 90 hours toward a degree.

Students majoring in English must complete a minimum of 12 graded hours in English courses at the 4000 level or above in residence with a grade point average of 2.0 or better in these courses or students must receive special consent of the department.

Students should consult with faculty advisers to determine which upper-level courses best satisfy their major needs and interests.

Bachelor of Arts in English with Certification for Secondary Education

All candidates for certification to teach English must enroll in a program in the College of Education involving Level I, Level II, and Level III coursework plus student teaching. See

the Division of Teaching and Learning in this *Bulletin* for information.

In addition to the requirements for the B.A. in English, students must meet the following requirements for secondary certification:

1) Two courses in American literature. This requirement may be met by courses counted for the major.
a American literature must include a unit or course in the literature of ethnic groups.
b American literature must include a unit or course in literature for adolescents.

2) Twelve hours in composition and rhetoric:

Eng 1100, Freshman Composition, may be counted.
Eng 3090, Practical Criticism: Writing About Literature, is required.
Eng 4880/Sec Ed 4880, Writing For Teachers, is required. Recommended courses include creative writing, journalism, and business writing.

3) English language requirements

a. Eng 2810, Traditional Grammar

Students with sufficient background may gain exemption from the Eng 2810 requirement by passing the English-Education Test of Basic Grammar. This test may be taken only twice. Certification candidates must pass Eng 2810 or the Test of Basic Grammar before applying for student teaching.

b. Eng 4810, English Grammar

c. Eng 4800, Linguistics, or Eng 4820, History of the English Language

4) Eng/Sec. Ed. 4885, The Curriculum and Methods of Teaching English. Prerequisite: Completion of Level I courses and a near major in English. Must be taken concurrently with professional internship, and before student teaching.

5) Eng/Sec. Ed 4888, English Teaching Seminar, must be taken concurrently with Sec Ed. 4990, Secondary School Student Teaching.

6) Candidates for certification in Missouri must have a 2.5 cumulative GPA, computed from the beginning of freshman year and including all colleges attended. They also need a minimum GPA of 2.5 in their English courses. All grades in professional education and in required English courses must be C- or better.

Bachelor of Science in Secondary Education with an Emphasis Area in English

All candidates for certification to teach English must enroll in a program in the College of Education involving Level I, Level II, and Level III coursework plus student teaching. See the Division of Teaching and Learning in this *Bulletin* for information.

The required courses in English and professional education are the same as those for the B.A. with certification for secondary education. However, students fulfill the general education requirements of the College of Education rather than those of the College of Arts and Sciences. For example, students seeking the B.S. in Education are not required to study a foreign language.

Certification to Teach Secondary Speech and Drama

All candidates for certification to teach Speech and Drama must enroll in a program in the College of Education involving Level I, Level II, and Level III coursework plus student teaching. See the Division of Teaching and Learning in this Bulletin for information.

In addition, undergraduates who wish to be certified to teach Speech and Drama must meet the requirements for a major in Communication as well as requirements set by the Theatre faculty.

Minor in English

A student may minor in English by taking at least 18 hours of English courses exclusive of Basic Writing, Eng 1100, Freshman Composition, and Eng 1110, Freshman Composition for International Students. Eng 3090 is required, and 12 of the 18 hours must be in literature courses, 9 of which must be in courses at the 3000 or 4000 level. Every student taking a minor in English must consult with an adviser in the English department to ensure a coherent program of studies. The GPA in courses for the minor must be 2.0 or better. Nine of the 18 hours must be taken in residence at UM-St. Louis. No more than 3 hours taken on a satisfactory/unsatisfactory basis may be counted toward the 18-hour minimum.

Certificate Program in Writing

A student may receive the Certificate in Writing by completing a total of 18 hours in writing courses chosen from the following list. The GPA in courses for the certificate must be 2.0 or better, and 12 of the 18 hours must be taken at UM-St. Louis. Courses may not be taken on a satisfactory/unsatisfactory basis.

Comm 2212, Broadcast Writing and Reporting
Comm 2217, Script Writing for Business and Industry
English 2030, Poetry Writing
English 2040, Short Story Writing
English 2050, Play Writing
English 2060, Introduction to the Writing of Poetry and Fiction
English 2080, or Comm 1108, Advertising Copywriting
English 2120, Topics in Writing
English 3030, Intermediate Poetry Writing
English 3040, Intermediate Fiction Writing
English 3090, Practical Criticism: Writing About Literature
English 3100, Advanced Expository Writing
English 3110, Advanced Expository Writing for International Students
English 3120, Business Writing

English 3130, Technical Writing
English 3140 or Comm 3214, News Writing
English 3150, Feature Writing
English 3160, Writing in the Sciences
English 3180, Reporting
English 3280 or Comm 2228, Writing for Public Relations
English 4130, Advanced Poetry Writing
English 4140, Advanced Fiction Writing
English 4160, Special Topics in Writing
English 4850, Topics in Teaching Writing
English 4860, Editing
English 4870, Advanced Business and Technical Writing
English 4880, Writing for Teachers
English 4890, Independent Writing Project (This course is required. It is to be taken as the last course a student will take in the program, and it is to be used to generate an extensive final project or internship.)
English 4985, Editing Litmag
Honors 3100, Writing the City

Technical Writing Emphasis

The technical writing emphasis provides a more career-specific strategy for students enrolled in the Writing Certificate program. The technical writing emphasis is composed of **three required** courses:

3130, Technical Writing
4860, Editing
4870, Advanced Business and Technical Writing **or**
4890, Independent Writing Project

In addition, students take **three electives** for a total of 18 hours chosen from the following:

Business Administration

1800, Computers and Computer Information
3100, Contemporary Business Communication
Communication

1065, Introduction to Information Technology

Computer Science

1250, Introduction to Computer Science (Prerequisite: Math 1030, College Algebra)

English

3120, Business Writing
3140, News Writing
3150, Feature Writing
3160, Writing in the Sciences
3280, Public Relations Writing
4870, Advanced Business and Technical Writing (if **4890** is taken as requirement)
4890, Independent Writing Project (if **4870** is taken as requirement)

Graduate Studies

Admission Requirements

A candidate should have a bachelor's degree, with at least 18 hours in English courses. Normally only students with a

grade point average of at least 3.0 in undergraduate English courses and with an overall undergraduate average of 2.75 will be considered.

The graduate coordinator of the English Department with the advice of the graduate committee will use the undergraduate record and the scores of the GRE general test as the basis for a decision. We welcome letters of recommendation from the applicant's former English instructors, but they are not required. Applications to the MA in English are considered at all times. However, because spaces in graduate courses are limited, it is strongly advised that prospective students submit their applications well before the semester begins in order to gain admission into their appropriate classes.

Teaching Assistantships

A number of teaching assistantships are available for qualified applicants. In addition to the undergraduate record and the scores on the GRE general test, applications should include two letters of recommendation from former English instructors. Applications should be submitted to the graduate coordinator of the English department no later than March 15 preceding the academic year for which the appointment is desired.

Degree Requirements

Master of Arts in English

In addition to the Graduate School requirements, students must complete at least 36 hours, 27 hours of which must be in 5000-level courses. Nine hours may be taken in 4000-level courses approved by the department and Graduate School.

At the outset of the program, students in both the literature and writing theory tracks must take English 5000, Introduction to Graduate Study in English, which focuses upon bibliography, research methods, and literary criticism. Students must receive graduate credit for English 5000.

Students who choose a literature track must also take at least one course in each of the following six areas:

Area 1, British literature before 1660

Area 2, British literature between 1660 and 1900

Area 3, Twentieth-century literature (British, American, post-colonial, or in translation)

Area 4, American literature

Area 5, Theories of writing, criticism, language, and/or culture

Area 6, Literature in translation, study of a particular literary genre, or a course in another relevant discipline.

Students who choose the composition track must take 18 hours in literature courses (including Eng 5000 and 18 hours in composition courses (including Eng 5840). The literature courses should provide broad coverage, rather than a narrow focus on a particular genre or historical period. If students choose the thesis option (6 hours) they will take 15 hours in literature and 15 hours in composition.

Thesis Option

Students in literature or writing theory may elect the thesis option, which requires a total of 6 hours of thesis credit. The thesis should demonstrate original thought and substantial research and may be a critical study of literary works, a theoretical exploration of issues related to literature or writing, or a descriptive assessment of fieldwork related to writing and pedagogy. The thesis must be approved and assigned a grade by a thesis committee. The student will select a major professor who, after consulting with the chair and the graduate coordinator, will select two other members of the committee.

Further information may be found in *The Master of Arts in English*, available from the English department.

Master of Fine Arts in Creative Writing

The application process is identical to that for the master of arts degree, with these exceptions: there is one annual deadline for all applications, Feb. 15; a writing sample is required (15-20 poems or 20-40 pages of fiction); the GRE test is required only if the applicant seeks financial aid or a teaching assistantship.

In addition to the Graduate School requirements, students must complete at least 39 hours, 30 of which must be in 5000-level courses. Nine hours may be taken in 4000-level courses approved by the department and Graduate School. Students will specialize in one genre, poetry or fiction. They must complete the following course work: (a) 18-21 hours in creative writing courses: 15 hours of workshops (at least one course outside the genre), and 3-6 hours of English 6010; (b) 15 hours of courses in literature, language, writing theory or literary journal editing offered by the department; (c) 3-6 hours of electives: another workshop or literature/language/writing theory/literary journal editing course or a relevant offering in another discipline. Students may not take a 4000-level writing course in their genre for graduate credit. At least two of the writing workshops and English 6010 must be taken at UM-St. Louis. Complete information may be found in *The Master of Fine Arts in Creative Writing*, available from the English department.

Graduate Certificate in the Teaching of Writing, Gateway Writing Project.

Jointly housed in the Division of Teaching and Learning and the Department of English, this Graduate Certificate prepares teachers at all levels (K-12, college, adult) to improve their students' performance in writing. The program also emphasizes using writing as a means to promote learning in all content areas. All courses provide opportunities for teachers to write, revise, share feedback, and reflect on their own writing development. Based on the National Writing Project's core belief that teachers of writing must themselves be writers, the Graduate Certificate in the Teaching of Writing brings together sound pedagogy, composition theory, and writing practice.

The Certificate is an 18-hour program through the Gateway Writing Project (GWP); it may also be coordinated with other graduate programs. Certificate courses may be applicable to the M.A. in English with emphasis in composition or to various M.Ed. programs. The GWP Certificate is especially appropriate for post-master's candidates who wish to pursue a specialization in teaching writing. The Graduate Certificate in the Teaching of Writing requires a 12 semester-hour core of courses developed by the Gateway Writing Project: The GWP invitational institute (6 hrs), a designated "topics" course (3 hrs.), and an exit course (3 hrs.). The Certificate requires a minimum of 12 semester hours at the 5000 or 6000 level or above. Electives (6 hrs.) may be chosen from approved offerings in English or Education.

Admission:

Applicants must be admitted to Graduate School and be selected by the faculty admissions committee for the Gateway Writing Project's Certificate in the Teaching of Writing. The committee will review candidates on the basis of an interview, an application essay, and supporting documentation. Criteria include experience teaching writing at any level and academic record, especially in writing and the teaching of writing.

Prerequisites:

- Eng/SecEd 4880, "Writing for Teachers" or an equivalent course in teaching writing
- Coursework or competency in basic computer application.

Required Core Courses (12 semester hours)

- Eng4850/TchEd 5850, Topics in the Teaching of Writing (designated topics, 3 sem. hrs.)
- Eng 6880/SecEd 6880, Gateway Writing Project (6 sem. hrs.)
- TchEd. 6890, Seminar in Professional Writing for Teachers (exit course, 3 sem. hrs)

Electives (6 semester hours.)

Electives may be chosen from other Gateway Writing Project offerings or from courses offered by the appropriate academic department with advisor's approval. These electives must include at least one more 5000-6000 level course.

Suggested electives applicable to an MA in English with writing emphasis:

- Eng. 5800, Modern Linguistics
- Eng. 5840, Theories of Writing
- Eng. 5860, Writing/Reading Theory
- Eng. 5870, Composition Research
- Eng. 5890, Teaching College Writing

Suggested electives applicable to an M.Ed. in Elementary or Secondary Education

- El. Ed. 6387, Literacy Acquisition and Learning for Urban Students
- Sec. Ed. 6430, Problems in Teaching English in Sec. School
- El. Ed. 6432, Problems & Research in Language Arts
- El. Ed. 6482, Problems & Research in Elementary Reading
- Ed. Rem 6714, Action Research in Education

Courses in adult and higher education may also be appropriate. For complete information, see *The Gateway Writing Project's Graduate Certificate in Teaching Writing*, available from the English Department, from the Division of Teaching and Learning, and from the GWP Director via Continuing Education & Outreach.

Career Outlook

In addition to traditional employment as teachers at the primary, secondary, and community-college levels, recent UM-St. Louis graduates in English are working in journalism, editing, advertising, public relations, and other fields that place a premium upon creation and interpretation of the written word. Numerous recent English majors have successfully entered law school.

Course Descriptions

Courses in this section are grouped as follows: Composition; Language; Literature; and Special Offerings.

English 1100 Composition, or its equivalent, is a general prerequisite for all English courses numbered 2310 and above. This, and other specific prerequisites, may be waived by consent of the department. **English 3100** Advanced Expository Writing, its equivalent or consent of the instructor is a general prerequisite for all literature courses numbered 3000 and above for non-English majors.

Students who have earned 24 or more semester hours of credit at any accredited post-secondary institutions(s) before the start of the fall 2002 semester must meet the general education requirements stipulated in the UM-St Louis 2001-2002 Bulletin. The following courses fulfill the Humanities breadth of study requirements as described in that Bulletin:

COMPOSITION: 2030, 2040, 2050, 2060, 3030, 3040, 4020, 4130, 4140. LANGUAGE: 4800, 4810, 4820.
LITERATURE: 1120, 1130, 1140, 1150, 1160, 1170, 1200, 1700, 1710, 2200, 2230, 2240, 2250, 2280, 2310, 2320, 2330, 2340, 2350, 2710, 2720, 3250, 3800, 4060, 4000, 4070, 4080, 4250, 4920, 4260, 4270, 4030, 4050, 4320, 4340, 4350, 4360, 4370, 4380, 4410, 4420, 4440, 4450, 4510, 4520, 4540, 4560, 4580, 4610, 4620, 4640, 4650, 4750, 4770, 4760, 4740, 4930, 4940, 4950. SPECIAL OFFERINGS: 3500, 4885, 4888, 4900.

Writing Courses:**1100 Freshman Composition (3) [C]**

Teaches critical reading and thinking skills and emphasizes writing as a process. Enhances writing skills through a sequence of increasingly focus on problems of invention, organization, development, and revision in essay writing. Fulfills the campus complex writing assignments. Class discussion and small-group workshops freshman writing requirement. Does not count toward the major in English.

1110 Freshman Composition for International Students (3) [C]

Prerequisite: Essay proficiency test or a TOFEL score of 500 or above. Theory and practice of writing expository American prose. Special attention is given to verb tenses, idioms, articles, and syntax. Does not count toward the major in English. This course substitutes for English 1100 in all university requirements.

2030 Beginning Poetry Writing Workshop (3) [C,H]

Prerequisite: Eng 1100 or equivalent. An introduction to the writing of poetry and an exploration of contemporary poems as models for the writer. Students who have taken Eng 2060 may not take Eng 2030 for credit. The course counts toward the Certificate in Writing.

2040 Beginning Fiction Writing (3) [C,H]

Prerequisite: Eng 1100 or equivalent. An introduction to the writing of fiction and an exploration of contemporary short stories as models for the writer. Students who have taken Eng 2060 may not take Eng 2050 for credit. The course counts toward the Certificate in Writing.

2050 Introduction to the Writing of Plays (3) [C,H]

Prerequisite: Eng 1100 or equivalent. An introduction to the writing of plays and an exploration of contemporary plays as models for the writer. The course counts toward the Certificate in Writing.

2060 Introduction to the Writing of Poetry and Fiction (3)

Prerequisites: Eng 1100 or equivalent. An introduction to the writing of poetry and fiction and an exploration of contemporary poems and short stories as models for the writer. Students who have taken Eng 2030 or 2040 may not take Eng 2060 for credit. The course counts toward the Certificate in Writing.

2080 Advertising Copywriting (3)

[Same as MS 1108] To give students a hands-on approach for writing advertising material for print and broadcast against tight deadlines in a professional setting. The course counts toward the Certificate in Writing.

2120 Topics in Writing (3) [C,H]

Prerequisite: Eng 1100 or equivalent. This course will introduce the student to writing in specific areas. The department will announce topics and course content in the

Schedule. Possible topics are Argumentation, Reading and Writing About Public Affairs, Sports Reporting and Writing, and Writing About Science. A student may repeat the course once when topics are different. The course counts toward the Certificate in Writing.

3030 Poetry Writing Workshop: Lyric and Form (3)

Prerequisites: Eng 2030 or 2060 or the equivalent or consent of instructor. Workshop in poetry writing. The course counts toward the Certificate in Writing.

3040 Fiction Writing Workshop: Narrative Techniques (3)

Prerequisites: Eng 2040 or 2060 or the equivalent or consent of instructor. Workshop in fiction writing. The course counts toward the Certificate in Writing.

3090 Practical Criticism: Writing About Literature (3)

Prerequisites: Eng 1100 or equivalent and junior standing. The course acquaints students with the techniques and terminology of literary criticism and trains them in the rudiments of writing about literature. Students compose eight to ten practical, critical essays on drama, poetry, fiction, and nonfictional prose. Explication of particular texts is emphasized. A longer critical paper incorporating secondary sources and introducing students to basic methods and resources for research is assigned. The course is required of English majors but is open to all qualified students. Course does not count toward the major in English. May not be taken on satisfactory/unsatisfactory option. The course counts toward the Certificate in Writing.

3100 Advanced Expository Writing (3)

Prerequisites: Eng 1100 or equivalent (3-6 hours). This course further develops the experienced writer's style and analytical capabilities to the level of sophistication necessary for upper-division writing assignments and for academic and professional settings. The course includes complex readings, focuses on persuasion and argumentation, expands upon students' research and documentation skills, and requires research in university libraries. This course fulfills the university's requirement for a junior-level course in communicative skills. It may not be taken on a satisfactory/unsatisfactory basis. The course counts toward the Certificate in Writing.

3110 Advanced Expository Writing for International Students (3)

Prerequisite: Eng 1110 or equivalent. This course will develop the student's style and critical-analytical abilities in contemporary American English writing. The course will also offer an introduction to formal research and documentation methods for preparing papers in a variety of fields. Additional emphasis will be placed on improving the student's reading abilities, both in comprehension and vocabulary. Course satisfies the junior-level communicative skills requirement. May not be taken on the

satisfactory/unsatisfactory option. The course counts toward the Certificate in Writing.

3120 Business Writing (3)

Prerequisites: Eng 1100 or equivalent (3-6 hours) This course further develops the experienced writer's style and analytical capabilities to the level of sophistication necessary for upper-division writing assignments and for business and professional settings. Writing assignments may include business correspondence, reports, resumes, proposals, analyses, feasibility studies, and articles for in-house publications. The course emphasizes clarity, conciseness, organization, format, style, tone, and mechanical correctness; expands upon students' research and documentation skills; and requires research in university libraries. Fulfills the university's requirement for a junior-level course in communicative skills. It may not be taken on a satisfactory/unsatisfactory basis. The course counts toward the Certificate in Writing.

3130 Technical Writing (3)

Prerequisites: Eng 1100 or equivalent (3-6 hours). The major elements of industrial technical writing. Writing assignments include technical definitions, abstracts and summaries, mechanism descriptions, instructions, process analyses, technical reports and proposals. Emphasis is placed on clarity, conciseness, organization, format, style, and tone. The course includes an introduction to research methods and documentation. All readings are selected from industrial material. Fulfills the university's requirement for a junior-level course in communicative skills, subject to the approval of the student's major department. May not be taken on the satisfactory/unsatisfactory option. The course counts toward the Certificate in Writing.

3140 News Writing (3)

Same as Comm 3214 Prerequisite: Eng 1100 or equivalent. An introduction to news writing and reporting. Course covers basic components of news, reporting principles, and news writing style and structure. Daily writing assignments include coverage of speeches, meetings and interviews, accidents, deaths, courts, sports, consumer affairs, and government. Emphasis on clarity, accuracy, and speed. The course counts toward the Certificate in Writing.

3150 Feature Writing (3)

Prerequisite: Eng 1100 or equivalent. Study of free-lance and staff-written magazine or newspaper feature articles. Emphasis on relationship between types of publication and article content, research methods, and writing style. Frequent short assignments--journal entries, interviews, library projects, article critiques, and market reports--lead to production of full-length feature articles. May not be taken on the satisfactory/unsatisfactory option. The course counts toward the Certificate in Writing.

3160 Writing in the Sciences (3)

Prerequisite: Eng 1100 or equivalent (3-6 hours). Designed to teach students how to write effectively in the sciences.

Writing assignments include short reports, proposals and a major project. Students are encouraged to select projects that will reflect work in a science course which may include a research or analytical report, a formal proposal or a procedures/ instructions manual. Emphasis is placed on clarity, conciseness, organization, format, style, and tone. The course will include an introduction to research methods and documentation. Fulfills the university's requirement for a junior-level course in communicative skills, subject to the approval of the student's major department. May not be taken on the satisfactory/unsatisfactory option. The course counts toward the Certificate in Writing.

3180 Reporting (3)

Prerequisite: Eng 3140 or equivalent. Theory and practice of reporting news for publication in the print media. Includes one classroom session and one field assignment weekly. Stories must be filed within deadline limits. Writing emphasis is on clarity, conciseness, and accuracy. The course counts toward the Certificate in Writing.

3280 Public Relations Writing (3)

Same as Comm 2228 Prerequisite: Eng 3140 or equivalent. An introduction to the process of planning, producing, and evaluating written public relations messages. Writing assignments include media releases, letters, memos, position papers, background papers, brochures, and reports and proposals. The course counts toward the Certificate in Writing.

4130 Advanced Poetry Writing Workshop (3)

Prerequisite: Eng 3100 or equivalent; Eng 2030 or 3030 or consent of instructor; recommended prerequisite: 2330. Advanced workshop in poetry writing. The course counts toward the Certificate in Writing.

4140 Advanced Fiction Writing Workshop (3)

Prerequisite: Eng 3100 or equivalent; Eng 2040 or equivalent or consent of instructor. Advanced workshop in fiction writing. The course counts toward the Certificate in Writing.

4160 Special Topics in Writing (3)

Prerequisites: Eng 3100 or equivalent. Special topics in writing that are not covered in other 3000-level English courses. Since the topics of Eng 4160 may change each semester, the course may be repeated for credit if the topics area substantially different and consent of the instructor is given. The course counts toward the Certificate in Writing.

4850 Topics in the Teaching of Writing (3)

[Same as Tch Ed 5850]. Prerequisites: Eng 3100 or equivalent. Special topics in the practice of and pedagogy of writing designed for in-service teachers. Topics may include writing at specific grade levels, writing/reading workshops, writing in urban settings, writing across the curriculum, action research, new technology, classroom and district-level assessment. May be repeated once for credit if topics differ. The course counts toward the Certificate in Writing and the Graduate Certificate in the Teaching of Writing.

4860 Editing (3)

Prerequisites: Eng 3100 or equivalent as judged by instructor; Eng 2810 or 4810. Introduction to language and processes of editing. Includes copy editing, study of style manuals, and overview of production process. The course counts toward the Certificate in Writing.

4870 Advanced Business and Technical Writing (3)

Prerequisite: Eng 3100 or its equivalent as judged by instructor. An advanced, project-oriented course to produce substantial, multifaceted business and technical writing projects. These might include reports, manuals, proposals, Web projects, computer documentation, or other advanced written assignments. These projects demonstrate the ability to handle complex assignments requiring initiative, independent work, and professional-level writing skills. The course counts toward the Certificate in Writing.

4880 Writing for Teachers (3)

[Same as Sec Ed 4880]. Designed for prospective as well as in-service teachers, the course includes: (1) writing - short papers to be shared in workshop groups; (2) reading - current theory and research on writing and the implications for teachers; (3) teaching- classroom activities that foster growth in writing. The course counts toward the Certificate in Writing.

4890 Independent Writing Project (3)

Prerequisite: Eng 3100 or its equivalent as judged by instructor. Course limited to students who are completing their certificates in writing. May be taken concurrently with the final course in the certificate sequence. Students work either individually or with an instructor to complete an extensive creative writing project or an internship.

4985 Editing *Litmag* (3)

Prerequisites: Eng 3100 or equivalent and at least two creative writing courses. Course is primarily for students nearing the end of their certificates in writing. Students in this course create *Litmag*, the UM-St. Louis student literary magazine. Students will call for submissions; they will read and select work to be published; and they will produce the magazine, dealing with issues like format, budget, proofreading, print run, advertising, distribution, and publicity. The course is offered only in the spring and culminates with the publication of *Litmag* in late April.

5100 Graduate Workshop in Poetry (3)

Prerequisite: Open to students in the MFA program and to others with permission of instructor. Consists of a writing workshop in which the poetry written by the students enrolled in the course is discussed and analyzed by the instructor and members of the class. Students taking this course will be expected to write original poetry throughout the course. May be repeated for maximum graduate credit of fifteen hours.

5110 Graduate Workshop in Fiction (3)

Prerequisite: Open to students in the MFA program and to others with permission of instructor. Consists of a writing workshop in which the fiction (short stories or chapters of a novel) written by the students enrolled in the course is discussed and analyzed by the instructor and members of the class. Students taking this course will be expected to write original fiction throughout the course. May be repeated for maximum graduate credit of fifteen (15) hours.

5120 Graduate Workshop in Poetry and Fiction (3)

Prerequisite: Open to students in the MFA program and to others with consent of the instructor. Consists of a writing workshop in which the poetry and fiction written by the students enrolled in the course are discussed and analyzed by the instructor and members of the class. Students taking this course will be expected to write original poetry and/or fiction throughout the course. May be repeated for maximum graduate credit of fifteen (15) hours.

5130 Graduate Workshop in the Novel (3)

Prerequisite: Consent of the instructor, based on submission of sample of novel manuscript. A writing workshop in which a novel written by the student is discussed and analyzed by the instructor and members of the class. Students must have a complete novel manuscript (50,000 words minimum) ready for discussion by the beginning of class. May be repeated for maximum graduate credit of fifteen (15) hours.

5140 Graduate Workshop in Nonfiction (3)

Prerequisites: Open to students in the MFA program and to others with permission of the instructor. A variable-topics writing workshop focusing on one or more of the following forms: personal essay, memoir, travel writing, literary journalism, biography, or other types of literary nonfiction. May be repeated for maximum graduate credit of fifteen (15) hours.

5170 Techniques, Methods, and Effects in Fiction Writing (3)

Prerequisites: Open to students in the MFA program and to others with consent of the instructor. This course analyzes the technical choices made by important contemporary fiction writers in the area of point of view, tone, setting, form, and plot structure, and it examines the effects of those choices. Close consideration is given to fictional techniques that contribute to a story's characterization, tension, interest, reliability, drama, irony, and humor. The course is primarily for creative writers.

5190 Literary Journal Editing (3)

Prerequisite: Open to students in the MFA program who have had at least two graduate writing workshops and to others with permission of the instructor. In this course students serve as the first readers of all submissions to the university's literary magazine, *Natural Bridge*. Students will read and evaluate poems, short stories, and essays and recommend a body of work to the editorial board of the magazine. The editorial board will then consider the class

consensus in its final selection of material for publication. In addition to this primary task of editorial selection, students will also be involved in the production of an issue of the magazine. May be repeated for maximum graduate credit of nine hours.

5200 MFA Readings (3)

Prerequisites: Open to students in the MFA program and to others with consent of the instructor. This is an independent readings course. In consultation with an MFA faculty member, students choose works from the MFA Reading List and read them with the goal of broadening and sharpening their technical skills as writers. Students ordinarily choose works in one genre: poetry, the short story, or the novel. Each week the student reads and reports on at least one work. The course may be taken only once.

5840 Theories of Writing (3)

An analysis of major modern theories in composition.

5850 Studies in Composition (3)

The study of special topics in composition. Topics may include history of composition, psychology of writing, reader-response theory, etc.

5860 Writing/Reading Theory (3)

The parallel evolution of reading and writing theory and pedagogy. Topics include the influence of psycho-linguistics and reader-response theory and the link between reading and writing theory and instruction.

5870 Composition Research (3)

Students analyze and conduct research in composition. Course work teaches students to evaluate methodologies and implications, and to analyze data and to design research.

5890 Teaching College Writing (3)

Provides the opportunity for practical application of composition theory with an emphasis on improving teaching skills. Strongly recommended for graduate teaching assistants.

6010 Final Writing Project (3-6)

Prerequisite: Successful completion of 15 hours in graduate creative writing courses or permission from instructor. An independent writing tutorial taken by students after they have completed all other creative writing course work. Completion of the project requires a substantial body of original poetry or fiction. May be repeated for maximum graduate credit of six (6) hours.

6880 Gateway Writing Project (3-6)

Same as TchEd 6880. An intensive course in the writing process and the writing curriculum, designed for experienced teachers. Readings of current theory and research will be related to participants' experiences as writers and as teachers. Topics may vary. May be repeated for credit. No more than six hours may be applied toward the M.Ed. Counts toward the Graduate Certificate in Teaching Writing.

Language Courses:

2810 Traditional Grammar (3) [C]

An introduction to the terms and concepts of traditional grammar, beginning with the parts of speech and moving to more complex structures such as participles, gerunds, and clauses. The course also deals with the conventions of formal usage and punctuation.

4800 Linguistics (3)

Prerequisite: Eng 3100; majors, Eng 3090. A survey of linguistics with emphasis on what the field reveals about the English language. Topics include the sounds of language, grammar, writing systems, language acquisition, language in society, language history, dialects, and usage.

4810 English Grammar (3)

Prerequisite: Eng 3100; majors, Eng 3090; Eng 2810 or passing grade on English-Education Test of Basic Grammar. A study of modern English grammar from the perspectives of traditional, structural, and transformational grammar.

4820 History of the English Language (3)

Prerequisite: Prerequisites: Eng 3100 or equivalent. A historical survey of the English language from its Indo-European roots through Old and Middle English to the present. Topics include changes in sound, meaning, and grammar, as well as developments in American English, including regional and social dialects.

5800 Modern Linguistics (3)

A study of selected topics in the structure of the English language, combining readings in current linguistics publications with original research.

Literature Courses:

1120 Literary Types (3) [C,V,H]

The student is introduced to the various literary types, including poetry, drama, fiction, and the essay.

1130 Topics in Literature (3) [C,H]

Introduces the student to selected literary topics and/or genres. Each semester the department will announce topics and course content. Topics such as alienation, justice, and the absurd, and genres such as science fiction and contemporary drama are typical possibilities.

1150 Images of the Elderly in Film (3)

[Same as Ger 1115]. Analysis of the portrayal of older adults in various films. Class discussions focus on the style and thematic content of the film, as well as intergenerational relationships.

1160 Images of Age in Literature (3)

[Same as Ger 1116]. Reading and discussion of literature that portrays aging and old age in various settings. Emphasis is on contemporary novels, but poetry and drama such as King Lear are read as well. Discussion and short essays enable

consideration of how literature helps in the study of aging and also how the process of aging can be a creative force within literature.

1170 American Literary Masterpieces (3)

An introduction to major themes and works in American literature from the nineteenth century to the present. Selected works from Hawthorne, Poe, Melville, Whitman, Twain, James, Frost, Hemingway, Faulkner, O'Connor, Plath, and Bellow.

1175 Arts and Ideas (3)

Same as Art & Art History 1175, History 1175, Music 1175, Philosophy 1175, Theatre & Dance 1175. An interdisciplinary course tied to the semester's offerings at the Blanche Touhill Performing Arts Center as well as other events on campus featuring the visual arts, literature, music, and film. Each semester the course will provide background on the arts in general and will critically examine particular performances and offerings. Special themes for each semester will be selected once the Touhill schedule is in place. Students will be expected to attend 6-8 performances or exhibitions. Can be repeated once for credit.

1200 Myth (3) [C,V,H]

The nature of myth, with some consideration of the various theories used to account for its origins. An examination of central mythic motifs, images, and characters. While some attention will be given to comparing the mythologies of different cultures, the emphasis will be on reading Classical Greek and Roman mythology.

1700 African-American Literature (3) [C,H]

A survey of prose, poetry, and drama by black Americans from the period of enslavement through the Harlem Renaissance to the present.

1710 Native American Literature (3) [C,CD,H]

Surveys the literature of American Indians from its oral tradition of myth, legend, song, and oratory through its modern forms. The course satisfies the ethnic literature requirement for Missouri state certification in Secondary Education.

2200 Classical Literature in Translation (3) [C,V,H]

The civilization of ancient Greece and Rome as reflected by their major creative writers in some of their principal works: the epics of Homer and Vergil; the plays of Aeschylus, Sophocles, Euripides, Aristophanes, Plautus, Terence, and Seneca; the lyrics of Sappho and Catullus; the satire of Petronius; and Ovid's rendering of the classical myths.

2230 Jewish Literature (3) [C,H]

Examines the traditional Jewish literature of the Bible and later legends found in the Talmud and Midrash and also considers later phases of Jewish literature, both sacred and secular. These include medieval folklore and Hasidic tales.

2240 Literature of the New Testament (3) [C,H]

A comprehensive understanding of the New Testament, its literary background, and significance for Western civilization.

2250 Literature of the Old Testament (3) [C,H]

Prerequisite: Sophomore standing or consent of instructor. A comprehensive understanding of the Old Testament, its literary background, and significance for Western civilization.

2280 The Contemporary World in Literature (3) [V,H,CD]

Selected world literature since the second World War from the Middle East, Europe, Latin America, Africa, India, and Asia with emphasis on non-European literatures. This course excludes literature from the United States and England.

2310 English Literature I (3) [C,H]

The eighteenth century. Reading and analysis of representative development of English literature from the Middle Ages through the works of selected major writers.

2320 English Literature II (3) [C,H]

The development of English literature during the nineteenth and twentieth centuries. Reading and analysis of representative works of selected major writers.

2330 Introduction to Poetry (3) [C,H]

A close study of poems, with special emphasis on the varieties of poetic forms, and the means of interpretation and evaluation. The works studied will be primarily English and American, and from at least three different centuries.

2340 Introduction to Drama (3) [V,H]

A close study of major dramatic works in various modes, to introduce the student to the forms and techniques of dramatic literature. The works studied will be primarily English and American, and from at least three different centuries.

2350 Introduction to Fiction (3) [C,H]

A close study of major prose fiction, with particular attention to the varieties of fictional forms and techniques. The works studied will be primarily English and American, and from at least three different centuries.

2710 American Literature I (3) [C,H]

Representative selections from American authors from the middle of the seventeenth century to the middle of the nineteenth century.

2720 American Literature II (3) [C,H]

Representative selections from American authors from the middle of the nineteenth century to the present. Fulfills the requirement for Missouri Teacher Certification of a unit in literature of American ethnic groups" and a unit in American literature for adolescents."

3800 Topics in Women and Literature (3)

An examination of the role of women in literature, either as figures in literary works or as writers. Specific topics to vary from semester to semester. Since the topics of Engl 3800 may change each semester, the course may be repeated for credit if the topics are substantially different.

4000 History of Literary Criticism (3)

Historical survey of the principles of literary criticism from Plato to the present.

4030 Contemporary Critical Theory (3)

This course is to acquaint students with a range of critical methodologies that have gained currency since the 1960s. The kinds of criticism considered include formalist (New Critical, Russian, and Aristotelian), structuralist, post-structuralist, Marxist, reader-response, psycho-sexual, and feminist.

4050 Forms and Modes of Poetry (3)

Prerequisite: Eng 3090 prerequisite or corequisite. An advanced critical study of formal poetry, from classical and Renaissance models to modern innovations and masterpieces. The course will cover scansion, figurative language, stanza form and convention, modes of occasional poetry, and studies of formal poets (e.g. Yeats, McKay, Bogan, Auden).

4060 Adolescent Literature (3)

The course will expose students to the large variety of quality adolescent literature available for reading and study in middle and high school classes. It will also examine the relevance of a variety of issues to the reading and teaching of adolescent literature, among them: reader response, theory and practice; multiculturalism; literacy; the relation of adolescent literature to "classic literature"; the role of adolescent literature in interdisciplinary studies; adolescent literature as an incentive to extracurricular reading.

4070 The Two Cultures: Literature and Science (3)

Prerequisite: Eng 2320; Eng 3090, may be taken concurrently. Surveys the history of the debate about the relations between literature and science, beginning with the exchange between Arnold and Huxley in the Victorian period, continuing through the debate between Leavis and Snow at mid-century, and concluding with current controversies and with current efforts at interdisciplinary synthesis.

4080 Narrative, Cognition, and Emotion (3)

Prerequisite: Eng 2320; Eng 3090, prerequisite or corequisite. Examines narrative theory in the light of recent research into cognitive organization and the structure of the emotions. Traditional and contemporary theories of narrative--of realism, symbolism, point of view, tone, and genre--are developed through recent findings in empirical science. A variety of stories and novels are used as test cases for theoretical propositions.

4250 Old English Literature (3)

Prerequisite: Eng 3100; or, for majors, Eng 3090 prerequisite or corequisite and Eng 2310 prerequisite or permission of instructor. An introduction to the literary culture of Anglo-Saxon England through study of the Old English language and close reading of a diverse group of Old English texts from the eighth to eleventh centuries.

4260 Chaucer (3)

Concentrates on the poetry of Geoffrey Chaucer, including the *Canterbury Tales*, early poetic works, and the *Troilus and Criseyde*. All readings are in the original Middle English.

4270 Medieval English Literature (3)

A survey of old and middle English literature from Beowulf to Malory's *Morte d'Arthur*, exclusive of Chaucer. All works are read in modern English translations.

4320 Elizabethan Poetry and Prose (3)

Spenser, Sidney, Wyatt, and other poets of the later sixteenth century. The origin and development of prose fiction.

4340 Early Seventeenth-Century Poetry and Prose (3)

Donne, Jonson, Marvell, Bacon, and other poets and essayists of the Metaphysical, Cavalier, and Baroque schools, exclusive of Milton.

4350 Milton (3)

All the minor poems and the three longer poems with some attention to the major prose; Milton and his relation to the politics, theology, and literature of the seventeenth century.

4360 Tudor and Stuart Drama (3)

A survey of the dramatic writings of the period from the interludes of John Heywood to the closing of the theaters in 1642, with particular attention to the plays of Marlowe, Jonson, Webster, and Ford. Though Shakespeare will not be studied in this course, connections between his works and those of his contemporaries will be discussed.

4370 Shakespeare: Tragedies and Romances (3)

The development of Shakespeare's concept of tragedy and tragicomedy from *Titus Andronicus* to *The Tempest*. The plays will be related to the social and literary milieu of the period.

4380 Shakespeare: Comedies and Histories (3)

Shakespeare's early work for the theater with some attention to the sonnets and longer poems. An historical background for a study of all the plays, including discussions of Elizabethan society, the world of the stage, and Shakespeare's biography.

4410 Restoration and Eighteenth-Century Drama (3)

The principal tragedies and comedies from Dryden to Sheridan, including the plays of Congreve, Farquhar, Rowe, Gay, Fielding, and Goldsmith, among others.

4420 Age of Dryden and Pope (3)

The beginnings of English neoclassic literature in the Restoration and its development through the first half of the eighteenth century, focusing on Dryden, Swift, and Pope.

4440 Age of Johnson (3)

The breakdown of the neoclassic spirit and the introduction of the "new" poetry and novel. Consideration of Fielding, Johnson, Thompson, Young, Goldsmith, Sheridan, and others.

4450 The Eighteenth-Century English Novel (3)

The origins and early development of the English novel, from Defoe to Jane Austen.

4510 Early Romantic Poetry and Prose (3)

The English romantic movement with special emphasis on the early writers--Blake, Wordsworth, and Coleridge. Additional readings in selected prose writers and minor poets.

4520 Later Romantic Poetry and Prose (3)

The English romantic movement with special emphasis on the later writers--Byron, Shelley, and Keats. Additional readings in selected prose writers and minor poets.

4540 The Nineteenth-Century English Novel (3)

Novels of the Romantic and Victorian Periods, from Austen to George Eliot.

4560 Prose and Poetry of the Victorian Period (3)

Critical readings of selections from Tennyson, Browning, Arnold, and others, in addition to selections from the major prose writing.

4580 Literature of the Late Nineteenth and Early Twentieth Centuries (3)

Literature of the period between 1870 and the First World War, including works by writers such as Hardy, Conrad, James, Wilde, Stevenson, Shaw, Jefferies, and Wells.

4610 Selected Major American Writers I (3)

American literature of the nineteenth century: Emerson, Thoreau, Hawthorne, Melville, Whitman, and others.

4620 Selected Major American Writers II (3)

American literature of the late nineteenth and early twentieth centuries: James, Twain, Stephen Crane, Dreiser, and others.

4630 African American Literature Prior to 1900 (3)

Prerequisites: (Majors) Eng 3090, (Non-majors) Eng 3100 or consent of instructor. An examination of the roots of the African American literary tradition with emphasis on 19th century texts, primarily rhetoric and oratory by African Americans, though more contemporary work and other "forms" may be included. Study will focus on captivity/slave narratives, autobiography, sermons, poetry, prose, antebellum and post-bellum essays, speeches, spirituals and other relevant materials.

4640 American Fiction to World War I (3)

Development of the novel and short story in America.

4650 Modern American Fiction (3)

The novel and short story in America since World War I. There may be some attention to British and continental influences.

4660 African American Literature Since 1900 (3)

Prerequisites: (Majors) Eng 3090 (Non-majors) Eng 3100 or consent of instructor. This course examines the literary work of African Americans, focusing on fiction, poetry, short stories and essays written after 1900 expressing the major cultural, literary and thematic concerns of African Americans writing in the twentieth century, though some pertinent 19th century works may be included. Students will become familiar with "movements" in African American literature, such as protest literature, the Black Arts Movement, and the emergence of African American women's writing among others.

4740 Poetry Since World War II (3)

Reading and analysis of contemporary poetry.

4750 Modern British Fiction (3)

Critical reading and analysis of British fiction of the twentieth century. There may be some attention to American and continental influences.

4760 Modern Drama (3)

British, American, and European drama of the last one hundred years: the well-made play, the problem play, verse drama, new definitions of tragedy, the angry theater, theater of the absurd.

4770 Modern Poetry (3)

Critical reading and analysis of poetry of the late nineteenth and early twentieth centuries: Yeats, Eliot, Frost, Williams, and others.

4910 Studies in African/African American Literature, Criticism, and Diaspora (3)

Prerequisites: (Majors) Eng 3090, (Non-majors) Eng 3100 or consent of Instructor. This course focuses on the study of select topics of African and African American Literature and Criticism and Black Diaspora texts. Topics from semester to semester may vary and include such concentration areas as the Literature of Civil Rights, African American Me noir, Trans-Atlantic Black Literature, Captivity and Freedom Narratives, Diaspora Studies, The African American Folk Aesthetic, Poetry of the Black Aesthetes, Theories of Race and Class, and Black Feminist Writing, among others.

4920 Major Works of European Fiction (3)

Prerequisites: Two college courses in literature. The development of the European novel in the nineteenth and twentieth centuries. Representative works of writers such as Balzac, Flaubert, Dostoevsky, Tolstoy, Kafka, and Froust, read in translation.

4930 Studies in Gender and Literature (3)

Same as WGS 4930. The course examines the role of gender in literature, including the transformation of literary genres by women writers, writings by women during a particular historical period, and gender relations in literature. Specific topics vary from semester to semester. The course may be repeated for credit with departmental approval.

4931 English Women Writers, 1300-1750 (3)

Same as WGS 4931. Works will be read ranging in scope from closet drama and romance to lyrics to personal, political, and religious writings by women, such as Margery Kempe, Mary Sidney, and Amelia Lanyer, who wrote during a period when reading and writing were not the female norm.

4932 Female Gothic (3)

Same as WGS 4932. This course examines the historical development of the female gothic, a genre which employs narrative strategies for expressing fears and desires associated with female experience. From the late 18th century to the present, we will trace the persistence of the gothic vision in fiction and film.

4933 Female Novel of Development (3)

Same as WGS 4933. The course covers the development of the female *Bildungsroman* from the late 18th century to the present. We will consider how contemporary and current theories of female development help us read these novels within their particular cultural contexts.

4934 Austen and the Brontes (3)

Same as WGS 4934. This course covers the novels of the major 19th century British writers Jane Austen and the three Bronte sisters, Anne, Emily, and Charlotte. The course will be devoted to Austen's romantic comedies and the historical/cultural contexts that inform the novels, as well as the darker romanticism of the Brontes, along with the biographical, cultural, philosophical, and religious contexts of their work.

4935 Women Heroes and Romantic Tales (3)

Same as WGS 4935. Women as epic and romantic heroes in British and transatlantic writing 1790s-1850s: reformers and rulers in novels by Mary Wollstonecraft and Mary Shelley; a runaway slave and an epic poet in works by Mary Price and Elizabeth Barrett Browning; erotic and political adventures in Robinson, Dacre, Hemans; American icons "Pocahontas" and "Evangeline" in Sigourney and Longfellow.

4936 Tales of the Islamic East (3)

Same as WGS 4936. Adventure, gender, and power in British and post-colonial writing: Lady Montague on Turkey, Gibbon on Islam, Byron and Hemans on harems and heroes, Disraeli on the Jewish Caliph of Baghdad, T.E. Lawrence on Arabia, and el Saadawi and Rushdie on (post) modern gender and the Islamic East.

4937 Irish and Irish-American Women Writers (3)

Same as WGS 4937. This course traces the parallel arcs of feminism reflected in similarly-themed Irish and Irish-American women's novels from 1950 to the present. Authors range from Edna O'Brien and Mary McCarthy, the first contemporary feminist novelist in Ireland and America, through Emma Donoghue and Eileen Myles, whose lesbian protagonists bring feminist perspectives into the 21st century.

4938 American Women Poets of the 20th/21st Centuries (3)

Same as WGS 4938. Introduction to American women poets since 1900: anarchists, Imagists, Harlem formalists, white lyricists, modernists (Ridge, H.D., Dunbar-Nelson, Millay, Stein); mid-century giants (Rukeyser, Brooks) and Confessionals (Sexton, Plath); feminists and multiculturalists (Rich, Lorde, Giovanni, Hogan), poets of witness and the play of language and the mind (Klepfisz, Olds, Mullen, Perillo).

4940 Special Topics in Jewish Literature (3)

Intensive readings, critical discussion, and writing on topics relating to Jewish literature. Topics to be announced. This course may be repeated for credit if the topics are substantially different.

4950 Special Topics in Literature (3)

Special topics in literature that are not covered in other 4000-level English courses. Since the topics of English 4950 may change each semester, the courses may be repeated for credit if the topics are substantially different.

4960 Ethnic Literatures (3)

Prerequisites: Eng 3100 or for English Major, Eng 2320, Eng 2720, and Eng 3090, or permission of instructor. This course will examine the literary work of Ethnic Writing with a special focus on the function of identity in literature. Students will read work arranged either as a collection of various ethnic writers or as subject-specific groups, such as Women Writers of Color, Irish/Irish American Writers, West Indian Writers in the US, South African Writers, etc. Students will come to understand the socio-historic relevance of literary movements as well as significant events such as the Great Northern Migration, Eugenics, World Wars I and II, etc. in order to understand how representative American and World Literature has become more culturally diverse and inclusive in the 20th century.

5000 Introduction to Graduate Study in English (3)

A course designed to prepare students for the professional study of English. The course will both familiarize students with basic bibliographic tools and scholarly methods and introduce them to issues that are of current critical interest to those engaged in the advanced study of literature. These issues include gender, textuality, reader-response, multiculturalism, feminism, psychoanalysis, cultural studies, literary history and the relationship of literature to philosophy, history and science. Must be taken within the first twelve hours of graduate study.

5030 Literary Criticism (3)

An examination of selected theories of literature.

5040 Feminist Critical Theory (3)

Same as WGS 5040. Prerequisite: Graduate standing and consent of instructor. A consideration of feminist critical theory as a means of reassessing literary texts and our cultural heritage. After exploring the roots of feminist criticism, the seminar will examine Anglo-American and continental debates on theories of language, writing and representation. In providing an interdisciplinary context the course will consider studies in psychology, anthropology, history, and philosophy/theology which have influenced and enriched feminist approaches to literature.

5150 Magical Realism Workshop (3)

Prerequisites: Open to student in the MFA Program and other graduate students with consent of instructor. Half of this course will be a study of the classic texts of magical realism and the other half will be a fiction workshop in which the members of the class will write in this imaginative and symbolic genre. Non-MFA students will write a critical study of magical realism.

5180 Form and Theory of Poetry (3)

Prerequisites: Open to students in the MFA Program and other graduate students with consent of instructor. This course explores various aspects of traditional and contemporary poetry. The student will gain an understanding of formal poetry-rhyme and meter-as well as of traditional types of poetry, for example, the lyric and the narrative. Throughout the course, an emphasis will be maintained on free verse and a greater understanding of its practice. Students will read selectively in the poetry, theory, and critical approaches of various periods, for example, the romantic and the modern, and within various movements, such as the symbolist or confessional.

5250 Studies in Middle English Literature (3)

Special topics in English literature before 1500.

5300 Renaissance Literature (3)

Special topics in English literature from 1500 to 1660.

5400 Eighteenth-Century Literature (3)

Studies in Augustan poetry and prose, including drama and fiction, with emphasis on background and major figures.

5500 Nineteenth-Century Literature (3)

Special topics in English romanticism, in Victorian life and thought, and in the development of the novel and of poetry between 1797 and 1914.

5600 American Literature Before 1900 (3)

Selected American writers or topics from the Colonial period to 1900.

5650 Critical Studies in African American Texts (3)

This course will examine the critical and literary work of African Americans and Afro-Caribbeans. It will focus on fiction, poetry, short stories and essays expressing the major cultural, literary and thematic concerns of African American writing in the latter part of the twentieth century. Students will become familiar with "movements" in African American literature such as protest literature, the Black Arts Movement, and/or the emergence of African American Women's writing, among others. Students will utilize current scholarship, theory, and criticism as a means to investigate and study primary texts in the course.

5700 Twentieth-Century American Literature (3)

Selected American writers or topics from 1900 to the present.

5750 Twentieth-Century British Literature (3)

Selected British and Commonwealth writers of the twentieth century.

5910 Studies in Poetry (3)

Study of a few selected British and American poets.

5920 Studies in Fiction (3)

Study of a few selected British and American novelists and short story writers.

5930 Studies in Drama (3)

Study of a few selected British and American dramatists.

5950 Seminar in Special Topics (1-3)

Special topics which are not covered in other graduate-level English courses.

5970 Independent Reading (1-3)

Directed study in areas of English for which courses are not available.

6000 Thesis (6)

Prerequisite: 3.5 graduate G.P.A. Thesis research and writing on a selected topic in English studies.

Special Offerings**3500 Special Studies (1-3)**

Prerequisites: A course in the area of proposed work and consent of instructor. Individual work, with conferences adjusted to needs of the student. May not be used to meet specific English department distribution and language requirements. May be repeated for a maximum total of three hours credit.

4885 The Curriculum and Methods of Teaching English (3)

Prerequisites: Tch Ed 3310 and a near major in the subject area. (Same as Sec Ed 4885). A study of the scope and sequence of the English courses in the school curriculum with emphasis on the selection and organization of

materials and methods of instruction and evaluation. The course prepares students for reflective teaching by relating course readings to field experiences and theory to practice. To be taken prior to student teaching and concurrently with Secondary Education Professional Internship, Sec. Ed 4989. This course must be completed in residence. Not available for graduate credit.

4888 English Teaching Seminar (2)

Prerequisites: Sec Ed 4885/Eng 4885 and a near major in the subject area. Same as Sec Ed 4888. A seminar in the integration of English curricula, educational philosophy, teaching strategies, and instructional technology in the classroom setting. To be taken concurrently with Secondary Student Teaching, Sec. Ed 4990. Not available for graduate credit.

4900 Seminar (3)

Prerequisite: Consent of instructor. Intensive reading, critical discussion, and writing on topics to be announced each semester. Since the topics of Eng 4900 may change each semester, the course may be repeated for credit if the topics are substantially different. Enrollment limited to twelve students.

Department of Foreign Languages and Literatures

Faculty

Susan E. Brownell, Associate Professor*,
Interim Chairperson
Ph.D., University of California-Santa Barbara

Roland A. Champagne, Professor Emeritus*, French,
Ph.D., Ohio State University

Lorna V. Williams, Professor*, Spanish
Ph.D., Indiana University

Jeanne Morgan Zarucchi, Professor*, French and Art
History
Ph.D., Harvard University

Albert J. Camigliano, Associate Professor Emeritus,
German
Ph.D., University of Wisconsin

Ingeborg M. Goessl, Assistant Professor Emerita*, German
Ph.D., University of Kansas

Maite Núñez-Betelu, Assistant Professor, Spanish
Ph.D., University of Missouri-Columbia

Sheridan Wigginton, Assistant Professor,
Spanish and Education
Ph.D., University of Missouri-Columbia

Deborah Baldini, Senior Lecturer, Spanish
Ph.D., University of Missouri-St. Louis

Anne-Sophie Blank, Senior Lecturer, French
M.A., Washington University

Maria Teresa Balogh, Lecturer, Spanish
M.A., Southern Illinois University, Carbondale

Martha Caeiro, Senior Lecturer, Spanish
M.A., Washington University

Donna Cays, Senior Lecturer, Spanish
M.A., Saint Louis University

Elizabeth Eckelkamp, Lecturer, Japanese
M.A., Washington University

Kersten Horn, Lecturer, German
M.A., University of Texas, Austin

Elizabeth Landers, Lecturer, French
M.A., Washington University

Xingbo Li, Lecturer, Chinese
Ph.D., University of Texas, Austin

Rosalina Mariles, Lecturer, Spanish
M.S., Southern Illinois University, Edwardsville

Nancy Mayer, Lecturer, ESL
M.A.T., Webster University

Denise Mussman, Senior Lecturer, ESL
M.A., University of Illinois-Chicago

Susana Walter, Senior Lecturer, Spanish
M.A., Washington University

Vassiliki Rapti, Lecturer, Modern Greek Studies
M.A., University of Missouri-St. Louis

Kimberley Sallee, Lecturer, Spanish
M.A., University of New Mexico

Sandra Trapani, Senior Lecturer, French
M.A., University of Missouri-Columbia

Margaret B. Phillips, Senior Lecturer, Latin
Ph.D., Saint Louis University

Susan Yoder-Kreger, Senior Lecturer, Spanish
M.A., University of Virginia, Charlottesville

*members of Graduate Faculty

General Information

Degrees and Areas of Concentration

The Department of Foreign Languages and Literatures offers course work in French and Spanish, leading to the B.A. degree, and a field of concentration in each of these languages for students seeking the B.S. degree in education. In addition, the department offers lower-level courses in English as a Second Language, German, Modern Greek, Japanese, and Latin.

A minor in French, German, or Spanish may also be earned in the department. For details, see specific requirements for the minor, which appears later in this section.

The department maintains a library where books, journals, magazines, and other foreign language realia are available to students, and a language resource center with audiovisual and computer materials.

Cooperative Study

Courses in other languages are available to UM-St. Louis students through Washington University, Saint Louis University, Harris-Stowe State College, and SIU-Edwardsville. For information, consult the UM-St. Louis registrar's office.

Study Abroad

Language students who have been at the University of Missouri-St. Louis at least one semester and have studied the language at least one year may receive credits for formal study abroad during the summer. Prior consent of the department must be obtained for summer courses abroad, and the student must present a transcript for evaluation. Exchange programs are available with several universities in foreign countries. For information, contact the study abroad office.

Alumni Scholarship

Qualified junior and senior language majors may apply for the Foreign Language Alumni Scholarship, which is renewable each semester on a competitive basis. For information, contact the department.

Baldini Family Scholarship

Qualified full-time UM-St. Louis students pursuing a foreign language and literature degree with teacher certification may apply for this scholarship which is awarded on a competitive basis and must be used within one semester of the award. For information, contact the department.

Community College Scholarship

Qualified community college students may apply for the Foreign Language Community College Scholarship to be

applied for educational fees toward the enrollment in third semester or higher courses in French, German, or Spanish. This scholarship must be used within one semester of the award. For information, contact the department.

German Scholarships

Students of German may apply for UM-St. Louis Summer Abroad scholarships that will partially finance their summer studies abroad. For information, contact the department.

Departmental Honors

Candidates for departmental honors in French or Spanish must meet the following requirements:

- 1) Achieve a GPA of 3.5 in the major for all hours attempted beyond the first two semesters. (Language Courses 1001 and 1002.
- 2) Maintain an overall GPA of 3.0.
- 3) Successfully complete an honors thesis or project.

Undergraduate Studies

General Education Requirements

Each language major must satisfy the general education requirements of the university and the general education requirements of the College of Arts and Sciences.

Satisfactory/Unsatisfactory Option

Students who have fulfilled the language requirement (13 hours: Language Courses 1001, 1002, and 2101) may enroll in a second language on a satisfactory/ unsatisfactory basis.

Specific Requirements or Restrictions

Students entering with no high school language units must enroll in Language 1001 or may enroll in Language 2115. Language 2115 (a, b, and c) is the intensive study of a language and will satisfy the foreign language requirement. 2115a, 2115b, and 2115c are co-requisites and must be taken concurrently. All three sections must be completed with a grade of C- or better, to satisfy the foreign language requirement.

A grade of D in a Language 1001 course is a passing grade but not an entrance grade for a Language 1002 course. A grade of D in a Language 1002 course is a passing grade but not an entrance grade for a Language 2101 course or its equivalent. A grade of D in a Language 2101 course fulfills the language requirement, but is not an entrance grade for a higher-level course.

Demonstration of a high level of proficiency may reduce the number of hours required for the major. Native speakers of a foreign language should consult with the department concerning appropriate placement.

Students may not take for credit an elementary course if they have already completed a higher-level course for which the elementary course, or its equivalent, is a prerequisite.

Degree Requirements

Students electing to major in the department must have completed the 1002 course in the language selected with a grade of C- or better. Any major who receives a grade of D in any course required for the major must repeat that course. No course required for the major may be taken on a satisfactory/ unsatisfactory (s/u) basis.

Bachelor of Arts

All students seeking a B.A. in a foreign language must meet the departmental requirement of a minimum of 33 hours (excluding Language 1001 and 1002). The maximum number of hours that may be taken in the major is 45 (including Language 1001 and 1002). In addition, students seeking the B.A. in a foreign language who desire a teaching certificate must also take Course 3264 (same as SEC ED 3274), Curriculum and Methods of Teaching Foreign Languages, Course 4364 (same as SEC ED 4374), Foreign Language Teaching Seminar, and fulfill the professional secondary education requirements of the College of Education.

Bachelor of Science in Education

Those students seeking the B.S.Ed. degree, with a concentration in a foreign language, are required to complete 30 hours of work (excluding credit for Language 1001 and 1002, of which 12 hours must be on the 4000 level. Students working toward a degree in elementary education, with related work in a foreign language, should consult the College of Education concerning their program.

Transfer Students

Transfer students majoring in one of the foreign languages must complete at UM-St. Louis a minimum of 12 graded hours in language courses at the 3000 level or above with a grade point average of 2.0 or better in these courses.

Native Speakers

Native speakers must complete at least two courses at the 3200 level and four courses at the 4300 level to obtain a major in their native language.

Specific Requirements for the Major

French

Each major in French must complete the following courses: **2101**, Intermediate French Language and Culture, or the equivalent

2102, Intermediate French Language and Culture II

2180, Readings in French

3200, Advanced Grammar

3211, Contemporary French Civilization

3280, French Literature I: Middle Ages to Eighteenth Century

3281, French Literature II: Nineteenth and Twentieth Centuries

and four courses at the 4000-level.

The following courses are also strongly recommended:

German 2110, Masterpieces of German Literature in Translation
Spanish 2110, Spanish Literature in Translation
History 4351, Contemporary France: Since 1870

Spanish

Each major in Spanish must complete the following courses: **2101**, Intermediate Spanish Language and Culture, or **2105**, Commercial Spanish, or the equivalent

Two of the following three:

2171, Spanish Conversation and Pronunciation
2172, Spanish Composition
2180, Readings in Spanish
3200, Syntax of the Spanish Language
3210, Hispanic Culture and Civilization: Spain, or
3211, Hispanic Culture and Civilization: Spanish America
3280, Introduction to Hispanic Literature: Spain
3281, Introduction to Hispanic Literature: Spanish America

and four courses at the 4000-level, **one of which must be: 4399**, Seminar on Hispanic Literature

The following courses are also strongly recommended:

French 2110, Modern French Literature in Translation, or
2150, European Literature in Translation: Special Topics
German 2110, Masterpieces of German Literature in Translation
History 4355, History of Spain
History 4371, History of Latin America: to 1808
History 4372, History of Latin America: Since 1808
PolSci 3253, Political Systems of South America
PolSci 3254, Political Systems of Mexico, Central America, and the Caribbean

Specific Requirements for the Minor

A minor in French, German, or Spanish requires the completion of four courses in the language beyond the basic foundation sequence (Language 1001, Language 1002, and Language 2101). Transfer students must complete at least two courses for the minor at UM-St. Louis. All courses must be passed with a grade of C- or better.

French

2102, Intermediate French Language and Culture II
2180, Readings in French
Plus two French courses on the 3000-level or above.

German

2170, Composition and Conversation
2180, Readings in German
Plus two German courses on the 3000-level or above.

Spanish

Two of the three

2171, Conversation and Pronunciation
2172, Composition
2180, Readings in Spanish

Plus two Spanish courses on the 3000-level or above.

Students pursuing a graduate degree in secondary education may select an emphasis area in French, German, or Spanish. These required eighteen hours may be selected from 3000 and 4000 level courses in these languages.

Certificate in Foreign Language and Study Abroad

Students seeking the certificate must complete language courses at UM-St. Louis and abroad. The Center for International Studies and the Department of Foreign Languages and Literatures cooperate in offering the Certificate.

1) Foreign language study at UM-St. Louis

Students must select one of the following languages and complete the required courses at UM-St. Louis. Total: 6 credit hours.

A. French

French 2102, Intermediate French Language and Culture II
French 2180, Readings in French

B. German

German 2170, Composition and Conversation
German 2180, Readings in German

C. Spanish

Spanish 2172, Spanish Composition
Spanish 2180, Readings in Spanish

2) Foreign language study abroad

Students must complete two additional three credit hour courses, in language or literature, taught in the same target language selected above, at a foreign university that is affiliated with the UM-St. Louis Study Abroad Program, towards the goal of increasing competence in the target language. Total: 6 credit hours. All courses must be approved by the Department of Foreign Languages and Literatures.

Students should consult the study abroad advisor in the Center for International Studies to select a site for their study abroad experience. Then, students should consult the advisor in the Department of Foreign Languages and Literatures to select appropriate courses.

Minor in Applied Spanish

An applied minor in Spanish may be earned by completing five courses in Spanish beginning with Spanish 2101 or its equivalent. These courses need to be completed with a C- or better. Transfer students must complete at least two courses for the Applied Minor at UM-St. Louis. After Spanish 2101, students must complete the following courses in Spanish:

2171, Conversation and Pronunciation

2172, Composition

One of the following courses:

3200, Syntax, of the Spanish Language

3210, Hispanic Culture and Civilization: Spain

3211, Hispanic Culture and Civilization: Spanish America

3271, Advanced Spanish Conversation

Plus

3275, Practicum in Spanish

Career Outlook

Graduates with a foreign language degree may elect to enter the fields of teaching, business, journalism, communications, or government, or to pursue advanced degrees in their specialty. It is especially recommended that students consider a double major or another discipline and a language. A language then becomes an asset that makes graduates more adaptable to the demands of international communication in their second major discipline and hence more competitive and marketable upon completion of the B.A. degree.

Course Descriptions

Prerequisites may be waived by consent of the department.

Students who have earned 24 or more semester hours of credit at any accredited post-secondary institution(s) before the start of the fall 2002 semester must meet the general education requirements stipulated in the UM-St Louis 2001-2002 Bulletin. The following courses fulfill the Humanities breadth of study requirements as described in that Bulletin

FRENCH: 2101, 2102, 2110, 2150, 2180, 3211, 3280, 3281, 4331, 4341, 4342, 4353, 4354, 4362, 4365, 4371, 4375, 4390. GERMAN: 2101, 2110, 2150, 2180, 3201, 3202, 3210, 4311, 4315, 4320, 4345, 4397, 4398, 4399.

ANCIENT GREEK: 2101. MODERN GREEK: 2101.

JAPANESE: 2101. LATIN: 2101. SPANISH: 2101, 2110, 2111, 2150, 2180, 3210, 3211, 3280, 3281, 4310, 4315, 4320, 4321, 4325, 4330, 4331, 4335, 4340, 4345, 4351, 4360, 4399.

2111 Love in the Western World (3)

This course will examine concepts of love in western literary traditions. Its main focus will be concepts of love from Greek and Roman antiquity and Christianity, and the ways that these concepts have shaped modern ideas of love. Emphasis on language and culture is also important in interpreting the texts.

4300 Language Acquisition and Analysis (3)

The nature of human language, including language universals, sounds and sound patterns, word formation, and language processing. Students will be acquainted with first and second language acquisition, and will analyze data from various languages. Recommended for teachers of English and foreign languages.

4590 Foreign Language Teaching Seminar (2)

Same as Sec Ed 4590. Prerequisite: Concurrent enrollment in Sec Ed 4990 or consent of instructor. A practicum course in the teaching of foreign languages. Review and explanation of drills, dialogues, and a variety of classroom techniques, oral and written. A continuation of FLL 4589, Curriculum and Methods, with an emphasis on specific practical skills. To be taken concurrently with Sec Ed 4990, Student Teaching. Not available for graduate credit.

4399 Standards-Based Foreign Language Instruction (3)

Prerequisites: Teacher certification and one year teaching experience. Designed to provide in-service foreign language teachers with the background to enable them to design instructional units, which incorporate the standards for foreign language learning. May be applied toward the Master's in Secondary Education with an emphasis in foreign language teaching.

4589 Curriculum and Methods of Teaching Foreign Languages (3)

Same as Sec Ed 4589. Prerequisites: Teacher Educ 3310 and passing the departmental language skills test. A study of the scope and sequence of the foreign language courses in the school curriculum with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of foreign languages. To be taken prior to student teaching. This course must be completed in residence. Not available for graduate credit.

5464 Issues in Foreign Language Methodology (3)

Prerequisite: Foreign language education certification and teaching experience. Designed for secondary foreign language teachers, this course addresses recent developments in approaches and methods in the teaching of foreign languages. Emphasis is on curriculum design, teaching strategies, and evaluation. This course may be repeated for credit provided that the topic is different each time.

Arabic

1001 Arabic I (5)

Emphasis is placed upon the understanding, speaking, reading and writing of Arabic and upon the acquisition of the fundamentals of grammar and syntax.

1002 Arabic II (5)

Prerequisites: Arabic I, 1001 or equivalent. Emphasis is placed upon the understanding, speaking, reading and writing of Arabic. Continuation of the acquisition of the fundamentals of grammar and syntax.

2101 Intermediate Arabic I (5)

Prerequisites: Arabic II or equivalent. Students will advance their understanding of Arabic culture through discussions, readings and written work. Language skills will be further developed through meaningful communicative interaction.

2102 Intermediate Arabic II (5)

Prerequisites: Arabic 2101 or equivalent. Continuation of Arabic 2101.

2190 Special Readings (1-3)

Prerequisites: Arabic 2102 or consent of the department. Independent Study through readings, reports and conferences.

Chinese

1001 Chinese I (5)

Emphasis is placed upon the understanding, speaking, reading, and writing of Mandarin Chinese and upon the acquisition of the fundamentals of grammar and syntax.

1002 Chinese II (5)

Emphasis is placed upon the understanding, speaking, reading, and writing of Mandarin Chinese. Continuation of the acquisition of the fundamentals of grammar and syntax.

2101 Intermediate Chinese I (5)

Prerequisite: Chinese II or equivalent. Grammar review and continued development of language skills.

2102 Intermediate Chinese II (5)

Prerequisite: Chinese 2101 or equivalent. Continuation of Chinese 2101.

2150 Chinese Literature in Translation (3)

A historical and critical introduction to great works in classical Chinese literature and culture. All required readings will be in English translation. This course may be repeated for credit with different literary works with departmental approval. This course satisfies the University cultural diversity requirement.

2190 Special Readings (1-3)

Prerequisite: Chinese 2102 or consent of the department. Independent study through readings, reports, and conferences.

English as a Second Language

3201 ESL Listening and Speaking Skills (3)

Prerequisite: Minimum TOEFL score of 450 or placement by examination. This course is for international students. They gain skills in conversational level listening and speaking. Students improve comprehensive and discrete listening skills, conversation in various situations, strategies and pronunciation. In addition, students will practice these skills and learn about American culture by participating in local field trips. This course does not count toward a degree.

3203 Intermediate ESL Reading and Writing (3)

Prerequisite: Minimum TOEFL score of 450 or placement by examination. In this course international students develop fluency in their reading and writing skills in American English. This course consists of reading a variety of types of

written texts, vocabulary building, organization in writing from the paragraph to essay, techniques for generating ideas, grammar use and editing. This course does not count toward a degree.

3205 Intermediate ESL Grammar (3)

Prerequisite: Minimum TOEFL score of 450 or placement by examination. A course for international students who have already studied Basic English grammar. The content covers intensive study of verb tenses; their forms, meanings an integrated use; and other grammatical structures. This course does not count toward a degree.

4301 Advanced ESL Conversation and Pronunciation (3)

Prerequisite: Minimum TOEFL score of 500. Designed for non-native speakers who need to improve their fluency and pronunciation in American English. Conversation strategies, oral presentations and extensive practice to reduce accent are included. This course does not count toward a degree.

4302 Advanced ESL Listening and Note-taking (3)

Prerequisite: Successful completion of ESL 3201, minimum TOEFL score of 500 or placement by examination. Listening and note-taking skills are developed through practice. Students learn to recognize the organization and emphasis of class lectures. Strategies include vocabulary building, test taking, and participation in class discussions. This course does not count toward a degree.

4303 Advanced ESL Reading and Writing (3)

Prerequisite: Successful completion of ESL 3203, minimum TOEFL score of 500 or placement by examination. To prepare students for English 1100 or English 3210, writing skills include organization of essays, rhetorical forms and their structure works, revision of ideas, research techniques, grammar use and editing. For reading development, students read articles and a novel, practice reading strategies and learn how to summarize articles. This course does not count toward a degree.

4305 Advanced ESL Grammar (3)

Prerequisites: Minimum TOEFL score of 500. This course is for ESL students who need review and applied practice of English grammar for oral and written work. This course does not count toward a degree. Placement by assessment or consent of program coordinator.

4307 Advanced Pronunciation and Accent Reduction (3)

Prerequisites: ESL 4301, placement or consent of instructor. Designed for non-native speakers who have fluency in speaking English but need to reduce their accent to be better understood and feel confident expressing ideas. Course includes review and practice of the pronunciation of the consonants and vowels in American English; accent reduction, achieved through extensive practice of the stress, rhythm and intonation patterns; speaking skills through presentations. This course does not count toward a degree.

4390 Special Readings (1-3)

Prerequisites: Consent of instructor. Independent study through readings, reports and conferences.

5400 International Teaching Assistant Seminar (1-3)

Prerequisites: Consent of department. Focus is on presentation skills, strategies to facilitate communication, and cultural differences in education. Students develop effective teaching skills through class presentations. Not applicable to graduate degree program.

French

1001 French I (5)

Emphasis will be placed upon the speaking and understanding of French and upon the acquisition of the fundamentals of grammar and syntax. One-hour language laboratory per week required.

1002 French II (5)

Prerequisite: French 1001 or equivalent. Emphasis will be placed upon the speaking and understanding of French and upon the acquisition of the fundamentals of grammar and syntax. One-hour language laboratory per week required.

2101 Intermediate French Language and Culture I (3)

Prerequisite: French 1002 or equivalent. Students will advance their understanding of Francophone cultures through discussions, readings, and written work. Language skills will be further developed through meaningful communicative interaction.

2102 Intermediate French Language and Culture II (3), [C, H]

Prerequisite: French 2101 or equivalent. Emphasis will be placed on the study of French and Francophone culture and the continued development of language skills through meaningful communicative interaction.

2110 Modern French Literature in Translation (3)

Prerequisite: Sophomore standing. Reading and discussion of selected works in French literature from modern period, in English translation. No credit toward major in French.

2111 Francophone Culture (3)

Prerequisites: French 1002 or equivalent and permission of instructor. Analyses and discussions of cultural issues in the French-speaking world through the critical reading of representative texts.

2115A, 2115B, 2115C Intensive French (15)

Prerequisites: Aptitude test and permission of department. An intensive study of French 2115a, 2115b, 2115c are co-requisites and must be taken concurrently. All three sections must be completed with a grade of C- or better in each section to satisfy the foreign language requirement of the College of Arts and Sciences.

2150 European Literature in Translation: Special Topics (3)

Major figures, works, or movements in the literature of Europe and their relevance to our own age. The department announces topic in advance. Does not count toward major in French.

2160 French Phonetics (3)

Prerequisite: French 2101 or consent of instructor. An analytic and practical study of French pronunciation. Emphasis is placed upon the articulation and practice of contemporary French sounds.

2180 Readings in French (3), [C, H]

Prerequisite: French 2170 or equivalent. Development of language skills through reading and discussion of literary texts.

2190 Special Readings in French (1-3)

Prerequisites: French 2101 and consent of the department. Independent study on mutually acceptable topics through readings, reports, and conferences.

3200 Advanced Grammar (3)

Prerequisite: French 2170 or equivalent. Problems in grammatical analysis.

3205 Commercial French (3)

Prerequisite: French 2170 or equivalent. Introduction to French business language with emphasis on technical vocabulary and correct French usage in business affairs.

3211 Contemporary French Culture (3)

Prerequisite: French 2180 and 3200 or equivalent. Aspects of contemporary French culture, studied through a variety of authentic cultural materials and readings of fiction and nonfiction. All readings and class work are in French.

3271 Intermediate French Conversation (3)

Prerequisites: French 2170 or consent of department. Emphasis will be placed upon the further development of oral skills in French.

3280 French Literature I: Middle Ages to Eighteenth Century (3)

Prerequisite: French 2180 and 3200 or equivalent. Designed to acquaint the student with the development of French literature from the Middle Ages to the eighteenth century. Critical reading of representative texts.

3281 French Literature II: Nineteenth and Twentieth Centuries (3)

Prerequisite: French 2180 and 3200 or equivalent. Designed to acquaint the student with the development of French literature from the nineteenth century to the present. Critical reading of representative texts.

3290 Special Readings (1-3)

Prerequisite: Consent of department. Independent study through readings, reports, and conferences.

4300 Syntax and Stylistics (3)

Prerequisite: French 3200 or equivalent. Advanced theoretical and practical study of modern French syntax. Analysis of French prose style.

4311 Special Topics in French Culture (3)

Prerequisite: Junior standing or French 3280 or 3281 for French majors. Selected topics in French culture. This course may be repeated for credit provided the topic is different each time.

4331 Medieval and Renaissance Literature (3)

Prerequisite: French 3280 or 3281. A study of the development of French literature from the Middle Ages to the end of the sixteenth century. Texts for reading and discussion will include medieval romances, lyric poetry, and works of humanist philosophy.

4341 Seventeenth-Century French Theater and Poetry (3)

Prerequisite: French 3280 or 3281. Critical reading and analysis of French Classical Age theater and poetry, including works by Corneille, Moliere, Racine, and La Fontaine.

4342 Seventeenth-Century French Prose (3)

Prerequisite: French 3280 or 3281. A study of moralists and social commentators in the age of Louis XIV, with critical reading and analysis of texts by Pascal, La Rochefoucauld, and others.

4353 Eighteenth-Century French Literature (3)

Prerequisite: French 3280 or 3281. The philosophic movement. Selected readings of the eighteenth century, including Montesquieu, Voltaire, Diderot, and Rousseau.

4354 Eighteenth-Century French Theater and Novel (3)

Prerequisite: French 3280 or 3281. Critical reading and discussion of representative novels and plays of the eighteenth century.

4362 Nineteenth-Century French Novel (3)

Prerequisite: French 3280 or 3281. Critical reading of selected works by the major novelists of the period. Discussion of realism and naturalism.

4365 Modern French Poetry (3)

Prerequisite: French 3280 or 3281. A study of French poetry in the nineteenth and twentieth centuries through critical readings of selected works by major poets.

4371 Twentieth-Century French Novel (3)

Prerequisite: French 3280 or 3281. A study of selected works by the principal novelists of the modern period.

4375 Modern French Theater (3)

Prerequisite: French 3280 or 3281. A study of French drama in the nineteenth and twentieth centuries through critical study of selected works by major dramatists.

4390 Special Readings (1-3)

Prerequisite: Consent of instructor. Independent study through readings, reports, and conferences.

4399 French Seminar (3)

Prerequisite: French 3280 or 3281. Specialized topic in French literature. Subject to be announced by instructor in charge of seminar.

5311 Advanced Topics in French Culture (3)

Prerequisites: Graduate standing or permission of instructor. Selected topics in French culture; may be repeated for credit with a different topic. Students will be expected to conduct an independent research project. Language of instruction is French.

5400 Contemporary French Thought (3)

Prerequisite: B.A. or permission of instructor. Analysis and discussion of contemporary cultural French issues through a representative sample of journals and pamphlets. In French.

German**1001 German I (5)**

Emphasis will be placed upon the speaking and understanding of German and upon the acquisition of the fundamentals of grammar and syntax. One-hour language laboratory per week required.

1002 German II (5)

Prerequisite: Ger 1001 or equivalent. Emphasis will be placed upon the speaking and understanding of German and upon the acquisition of the fundamentals of grammar and syntax. One-hour language laboratory per week required.

2101 Intermediate German Language and Culture (3)

Prerequisite: Ger 1002 or equivalent. Students will advance their understanding of German-speaking cultures through discussions, readings, and written work. Language skills will be further developed through meaningful communicative interaction.

2110 Masterpieces of German Literature in Translation (3)

Prerequisite: Sophomore standing. Representative readings in German literature from the beginning to the present. Emphasis to be placed upon German literature in the general context of European culture. No credit toward minor in German.

2115A, 2115B, 2115C Intensive German (15)

Prerequisites: Aptitude test and permission of department. An intensive study of German assuming no previous knowledge of German. 2115a, 2115b, 2115c are co-requisites

and must be taken concurrently. All three sections must be completed with a grade of C- or better in each section to satisfy the foreign language requirement of the College of Arts and Science.

2150 European Literature in Translation: Special Topics (3)

Major figures, works, or movements in the literature of Europe and their relevance to our own age. Topic announced in advance by the department. Does not count toward major in German.

2170 Composition and Conversation (3) [C, H]

Prerequisite: Ger 2101 or equivalent. Emphasis will be placed on the development of speaking and writing skills in German.

2180 Readings in German (3) [C, H]

Prerequisite: Ger 2170 or equivalent. May be taken concurrently. Further development of language skills through readings and discussions of literary texts.

2190 Special Readings (1-3)

Prerequisites: Ger 2101 and consent of department. Independent study on mutually acceptable topics through readings, reports, and conferences.

3201 Masterpieces of German Literature (3)

Prerequisite: Two years of college German or equivalent. Introduction to German literature. Readings and critical analysis of selected works of German literature.

3202 The German Novelle and Drama (3)

Prerequisite: Ger 3201 or equivalent. Reading and critical analysis of selected German Novellen and dramas.

3208 Intermediate Composition and Conversation (3)

Prerequisite: Ger 2170 or equivalent. Emphasis on speaking and writing German.

3210 German Culture and Civilization (3)

Prerequisite: Ger 2180 or equivalent. A survey of the development of German culture and civilization. All reading and class work in German.

3290 Special Readings: German (1-3)

Prerequisite: Consent of department. Independent study through readings, reports, and conferences.

4308 Advanced Composition and Conversation (3)

Prerequisite: Ger 3208 or equivalent. Continuation of Ger 3208. Designed to develop accuracy and fluency of expression in German.

4311 Special Topics in German Culture (3)

Prerequisites: At least one 3000 level German course and/or consent of instructor. Discussion of selected topics of German current events. This course may be repeated for credit provided the topic is different each time.

4315 German Classicism and Romanticism (3)

Prerequisites: Ger 3201 and one other 3000-level course in German. Representative writers from the classical and romantic periods of German literature, including works by Lessing, Goethe, Kleist, and E.T.A. Hoffmann.

4320 German Realism and Naturalism (3)

Prerequisites: Ger 3201 and one other 3000-level course in German. Representative writers of realism and naturalism in German literature, including works of Grillparzer, Hebbel, Stifter, Keller, and Hauptmann.

4345 Modern German Literature (3)

Prerequisites: Ger 3201 and one other 3000-level course in German. Representative works from modern German literature.

4390 Special Readings (1-3)

Prerequisite: Consent of instructor. Independent study through readings, reports, and conferences.

4397 Survey of German Literature Part I (3)

Prerequisite: Ger 3201 or 3202. Special emphasis on the summary and synthesis of trends and characteristics of major periods in German literature, considered in the general context of European culture.

4398 Survey of German Literature Part II (3)

Prerequisite: Ger 3201 or 3202. Special emphasis on the summary and synthesis of trends and characteristics of major periods in German literature, considered in the general context of European culture.

4399 German Seminar (3)

Prerequisite: Ger 3201 or 3202. Specialized topic in German literature.

5311 Advanced Topics in German Culture (3)

Prerequisites: Graduate standing or permission of instructor. Selected topics in German culture; may be repeated for credit with a different topic. Students will be expected to conduct an independent research project. Language of instruction is German.

Ancient Greek

1001 Ancient Greek 1 (5)

Study of grammar, syntax, and vocabulary, accompanied by readings of simple prose selections.

1002 Ancient Greek 2 (5)

Prerequisite: Ancient Greek 1 or equivalent. The study of vocabulary, grammar, and syntax is continued from Greek 1. Readings and discussion from selected classical authors.

2101 Intermediate Ancient Greek Language and Culture (3)

Prerequisite: Ancient Greek 1002 or equivalent. Students will advance their understanding of ancient Greek culture

through discussions, readings, and written work. Language skills will be further developed through meaningful communicative interaction.

2151 Greek and Latin in English Today (3)

Same as Latin 2151 Language and culture of Greece and Rome reflected in modern English. Emphasis on vocabulary derived from Greek and Latin. Included will be the Greek alphabet and an introduction to historical language change involving the relationship among Greek, Latin and Romance languages, and Germanic languages (particularly English). Attention will be paid to terms used in law, medicine, science, liberal arts, and to general vocabulary enrichment.

2190 Special Readings (1-3)

Prerequisites: Greek 2101 and consent of department. Independent study through readings, reports, and conferences.

Modern Greek

1001 Modern Greek I (5)

Emphasis is placed upon the understanding, speaking, reading, and writing of Modern Greek and upon the acquisition of the fundamentals of grammar and syntax.

1002 Modern Greek II (5)

Prerequisite: Mod Greek 1001 or equivalent. Emphasis is placed upon the understanding, speaking, reading, and writing of Modern Greek and upon the acquisition of the fundamentals of grammar and syntax.

2101 Intermediate Modern Greek Language and Culture (3)

Prerequisite: Mod Greek 1002 or equivalent. Students will advance their understanding of Modern Greek culture through discussions, readings, and written work. Language skills will be further developed through meaningful communicative interaction.

2102 Intermediate Modern Greek Language and Culture II (3)

Prerequisites: Modern Greek 2101 or equivalent. Emphasis is placed on the study of Greek and Greek-American culture and on the continued development of language skills through meaningful communicative interaction.

2150 Modern Greek Literature in Translation (3)

This course is an exploration of significant works by major Modern Greek authors, dealing with relevant issues of Western literary traditions. Authors include Cavafy, Kazantzakis, Seferis, Solomos, Elytis.

2190 Special Readings (1-3)

Prerequisite: Mod Greek 2101 or consent of the department. Independent study through readings, reports, and conferences.

Japanese

1001 Japanese I (5)

Emphasis is placed upon the understanding, speaking, reading, and writing of Japanese and upon the acquisition of the fundamentals of grammar and syntax.

1002 Japanese II (5)

Prerequisite: Japanese I or equivalent. Emphasis is placed upon the understanding, speaking, reading, and writing of Japanese. Continuation of the acquisition of the fundamentals of grammar and syntax.

1003 Japanese III (3)

Prerequisites: Japanese 1002 or equivalent. Review and practice of fundamentals of grammar, syntax, reading and writing acquired in 1002. This course is not a 2101 equivalent and may not be counted towards a foreign language requirement.

2101 Intermediate Japanese I (5)

Prerequisite: Japanese 1002 or equivalent. Students will advance their understanding of Japanese culture through discussions, readings, and written work. Language skills will be further developed through meaningful communicative interaction.

2102 Intermediate Japanese II (5)

Prerequisite: Japanese 2101 or equivalent. Continuation of Japanese 2101.

2150 Classical Japanese Literature in Translation (3)

An exploration of Classical Japanese literary masterpieces and the world from which they arose. All required readings will be in English translation. This course may be repeated once for credit with different literary works as a topic.

2190 Special Readings (1-3)

Prerequisite: Japanese 2102 or consent of the department. Independent study through readings, reports, and conferences.

3201 Intermediate Japanese III (3)

Prerequisites: Japanese 2102 or equivalent. Students will continue to advance their understanding of Japanese culture through discussions, readings, and written work. Language skills will be further developed through meaningful communicative interaction. This course satisfies the University cultural diversity requirement.

3202 Intermediate Japanese IV (3)

Prerequisites: Japanese 3201 or equivalent. Continuation of Japanese 3201.

3290 Special Readings (1-3)

Prerequisites: Japanese 2190 or consent of instructor. Independent study through readings, reports and conferences.

Latin

1001 Latin 1 (5)

A study of Latin grammar, syntax, and vocabulary, accompanied by reading selections from literary texts.

1002 Latin 2 (5)

Prerequisite: Latin 1001 or equivalent. The study of vocabulary, grammar, and syntax is continued from Latin 1. Readings and discussion from selected classical authors.

2101 Intermediate Latin Language and Culture (3)

Prerequisite: Latin 1002 or equivalent. Students will advance their understanding of Roman culture through discussions, readings, and written work. Language skills will be further developed through meaningful communicative interaction.

2151 Greek and Latin in English Today (3)

Same as Ancient Greek 2151. Language and culture of Greece and Rome reflected in modern English. Emphasis on vocabulary derived from Greek and Latin. Included will be the Greek alphabet and an introduction to historical language change involving the relationship among Greek, Latin, and Romance languages, and Germanic languages (particularly English). Attention will be paid to terms used in law, medicine, science, liberal arts, and to general vocabulary enrichment.

2190 Special Readings (1-3)

Prerequisites: Latin 2101 and consent of department. Independent study through readings, reports, and conferences.

Spanish

1001 Spanish I (5)

Emphasis will be placed upon the speaking and understanding of Spanish and upon the acquisition of the fundamentals of grammar and syntax. One-hour language laboratory per week required.

1002 Spanish II (5)

Prerequisite: Span 1001 or equivalent. Emphasis will be placed upon the speaking and understanding of Spanish and upon the acquisition of the fundamentals of grammar and syntax. One-hour language laboratory per week required.

2101 Intermediate Spanish Language and Culture (3)

Prerequisite: Span 1002 or equivalent. Students will advance their understanding of Hispanic cultures through discussions, readings, and written work. Language skills will be further developed through meaningful communicative interaction.

2105 Commercial Spanish (3)

Prerequisite: Span 1002 or equivalent. Grammar review and cultivation of language skills with emphasis on technical vocabulary and correct Spanish usage in business affairs. Designed for business majors, economics majors, or anyone interested in the commercial application of Spanish. This

course is the equivalent of Spanish 2101 but both courses may not be taken for credit.

2110 Spanish Literature in Translation (3)

Prerequisite: Sophomore standing. Lectures on the literature and culture of Spain from the Middle Ages to the contemporary period. Reading and discussion of works of representative Spanish writers: Cervantes, Calderon, Galdos, Unamuno, Garcia Lorca, Buero Vallejo, and others. No credit toward major in Spanish.

2115A, 2115B, 2115C Intensive Spanish (15)

Prerequisites: Aptitude test and permission of department. An intensive study of Spanish assuming no previous knowledge of Span 2115a, 2115b, 2115c are co-requisites and must be taken concurrently. All three sections must be completed with a grade of C- or better in each section to satisfy the foreign language requirement of the College of Arts and Science.

2150 European Literature in Translation: Special Topics (3)

Major figures, works, or movements in the literature of Europe and their relevance to our own age. The department announces topic in advance. Does not count toward major in Spanish.

2171 Spanish Conversation and Pronunciation (3) [C, H]

Prerequisite: Span 2101 or equivalent. Emphasis will be placed upon the development of oral skills in Spanish and upon the problems of Spanish pronunciation and intonation.

2172 Spanish Composition (3), [C, H]

Prerequisite: Span 2101 or equivalent. Emphasis in developing the capacity and the ability to write in Spanish.

2180 Readings in Spanish (3) [C, H]

Prerequisite: Span 2101 or equivalent. Development of language skills through reading and discussion of a variety of texts.

2190 Special Readings (1-3)

Prerequisites: Span 2101 and consent of department. Independent study through readings, reports, and conferences.

3200 Syntax of the Spanish Language (3)

Prerequisite: Span 2171, 2172, 2180 (2 of the 3 courses) or equivalent. Study of the syntactical and morphological characteristics of the Spanish language. Designed primarily for students majoring in Spanish. May be taken concurrently with any 3000 level course.

3210 Hispanic Culture and Civilization: Spain (3)

Prerequisite: Span 2171, 2172, 2180 (2 of the 3 courses) or equivalent. The development of Spanish peninsular civilization from its Roman beginnings to the present.

3211 Hispanic Culture and Civilization: Spanish America (3)

Prerequisite: Spanish 2171, 2172, or 2180 (2 of the 3 courses) equivalent. The development of the cultures and civilization of the Spanish-speaking nations of the Western hemisphere.

3260 Spanish for Business (3)

Prerequisites: Span 2171 or 2172 or equivalent and Span 3200 or permission from the instructor. Cultivation of advanced language skills with emphasis on business vocabulary, basic business and cultural concepts and situational practice to help prepare for interaction in the Spanish-speaking business world. Designed for international business students, economics students, or anyone interested in expanding their awareness of the Spanish language or wishing to explore the possibilities of positions with companies that need to conduct business in Spanish.

3271 Advanced Spanish Conversation (3)

Prerequisite: Span 2171 or consent of department. Emphasis will be placed upon the further development of oral skills in Spanish.

3275 Practicum in Spanish (3)

Prerequisites: One of the following: Span 3200, 3210, 3211, 3271 or equivalent, or consent of the instructor. A minimum of twenty hours per semester of supervised field experience in local agencies that serve the Hispanic community. A course designed for majors of various disciplines. Placement at the agencies is relevant to the enrolled student's major but depends on the availability of resources. Required weekly seminar accompanies the practicum.

3280 Introduction to Hispanic Literature: Spain (3)

Prerequisite: Span 2171, 2172, 2180 (2 of the 3 courses) or equivalent and Span 3200. Study of selected texts of Spanish writers from the Middle Ages to the present and the historical, cultural, and political factors, which influence their writing. Required of Spanish majors. Spanish 2180 is recommended for prerequisite.

3281 Introduction to Hispanic Literature: Spanish America (3)

Prerequisite: Span 2171, 2172, 2180 (2 of the 3 courses) or equivalent and Span 3200. Study of selected texts of Spanish-American writers from the colonial period to the present and the historical, cultural, and political factors, which influenced their writings. Required of all Spanish majors. Span 2180 is recommended for prerequisite.

3290 Special Readings: Spanish (1-3)

Prerequisite: Consent of department. Independent study through readings, reports, and conferences.

4300 Advanced Spanish Grammar (3)

Prerequisite: Span 3200 or equivalent. Advanced theoretical and practical study of the form and syntax of the Spanish language, focusing especially on sentence structure. Analysis

of texts, which illustrate different linguistic levels and their values. Designed to develop accuracy and fluency of expression in Spanish.

4310 Spanish Literature From 1898 to 1939 (3)

Prerequisite: Span 3280. A study of cultural and literary characteristics of the period. Emphasis on leading novelists, poets, essayists, and dramatists.

4311 Special Topics in Hispanic Culture (3)

Prerequisite: Junior standing or Span 3280 or 3281. Selected topics in Hispanic culture taught in Spanish. This course may be repeated for credit provided that the topic is different each time.

4315 Spanish Literature From 1939 to the Present (3)

Prerequisite: Span 3280. A study of cultural and literary development since the Spanish Civil War. Emphasis on leading novelists and dramatists.

4320 Realism and Naturalism in the Nineteenth-Century Spanish Novel (3)

Prerequisite: Span 3280. A study of the culture and literature of Spain in the nineteenth century with emphasis on the leading novelists of the epoch (Galdos, Clarin, Pardo-Bazan, Blasco-Ibanez).

4321 Poetry and Drama of the Nineteenth Century (3)

Prerequisite: Span 3280. A study of the culture and literature of Spain in the nineteenth century with emphasis on the leading poets (Espronceda, Becquer) and playwrights (Zorrilla, Duque de Rivas).

4325 Poetry and Drama of the Golden Age (3)

Prerequisite: Span 3280. Selected readings from the drama of Lope de Vega, Tirso de Molina, Ruiz de Alarcon, and Calderon de la Barca, and from the poetry of Garcilaso, Fray Luis de Leon, San Juan de la Cruz, Gongora, Lope de Vega, and Quevedo.

4326 Applied Linguistics in Spanish (3)

Prerequisites: Span 3200 or equivalent. Study of the general principles of linguistics applied to the learning and teaching of Spanish with special emphasis on historical linguistics. The course will focus on the development of the Spanish language with emphasis on etymological and phonological changes. Recommended for prospective teachers of Spanish.

4327 Spanish Dialectology (3)

Prerequisites: Span 3200 or equivalent. The course will focus on the syntactical, lexical and phonological variations of modern Spanish from a sociolinguistics perspective. Regional variations may include Castilian, Mexican, and Caribbean Spanish, Spanish of the northern Andes region and the Southern Cone, and the Spanish spoken in the United States.

4330 Cervantes (3)

Prerequisite: Span 3280. A study of Don Quixote in relation to the author's life and with the cultural background of the Spanish Golden Age. Independent readings on other works of Cervantes.

4331 Picaresque and Satirical Prose (1550-1650) (3)

Prerequisite: Span 3280. A study of Renaissance and Baroque prose in its social context. All readings and discussions are in Spanish.

4335 Masterpieces of Spanish Medieval and Renaissance Literature (3)

Prerequisite: Span 3280. Designed to acquaint students with the cultural background of medieval and Renaissance Spanish traditions. Critical reading and discussion of representative works of these periods: Poema del Cid, El Conde Lucanor, Libro de Buen Amor, El Romancero, La Celestina, the Picaresque novel, and Don Quixote.

4340 Spanish-American Literature of the Nineteenth Century (3)

Prerequisite: Span 3281. A study of the culture and literature of Spanish America in the nineteenth century with emphasis on the leading novelists and essayists of the epoch.

4341 Modernismo (3)

Prerequisite: Span 3281. The genesis, development, and influence of this literary movement in Spanish-American letters with emphasis on Modernista poetry and prose.

4345 Spanish-American Literature of the Twentieth Century (3)

Prerequisite: Span 3281. A study of the leading Spanish American poets, essayists, and novelists of this period as interpreters of contemporary man's dilemma and the Apathos--and Aethos--of their culture.

4351 Spanish-American Fiction in the Twentieth Century (3)

Prerequisite: Span 3281. The role of prose fiction in Spanish American literary and cultural history from World War I to the present.

4360 Spanish American Poetry From Modernismo to the Present (3)

Prerequisite: Span 3281. A study of poetry and its role in the literary and cultural history of Spanish-American society from Modernismo to the present.

4390 Special Readings (1-3)

Prerequisite: Consent of instructor. Independent study through readings, reports, and conferences.

4399 Seminar on Hispanic Literature (3)

Required of major students in the senior year. Subject to be announced every year by the instructor in charge of the seminar.

5311 Advanced Topics in Spanish Culture (3)

Prerequisites: Graduate standing or permission of instructor. Selected topics in Spanish culture; may be repeated for credit with a different topic. Students will be expected to conduct an independent research project. Language of instruction is Spanish.

5400 Spanish as Spoken Today (3)

Prerequisite: A.B. or permission of instructor. Contemporary Spanish, including emphasis on standard and colloquial speech: slang, proverbs, and the mass media. Some attention will be given to the influence of English on twentieth-century spoken Spanish. Study of samples; oral practice. prerequisite: A.B. or permission of instructor. Contemporary Spanish, including emphasis on standard and colloquial speech: slang, proverbs, and the mass media. Some attention will be given to the influence of English on twentieth-century spoken Spanish. Study of samples; oral practice.

Department of History**Faculty**

Louis Gerteis, Professor, Chairperson*
Ph.D., University of Wisconsin

Richard H. Mitchell, Curators' Professor*
Ph.D., University of Wisconsin

Jay Rounds, E. Desmond Lee Professor of
Museum Studies and Community History*
Ph.D., University of California, Los Angeles

Carlos A. Schwantes, Saint Louis Mercantile Library
Professor of Transportation Studies*
Ph.D., University of Michigan

Mark A. Burkholder, Professor*
Dean of College of Arts and Sciences
Ph.D., Duke University

Jerry M. Cooper, Professor Emeritus*
Ph.D., University of Wisconsin

Paul Corby Finney, Professor Emeritus*
Ph.D., Harvard University

John R. Gillingham, Professor*
Ph.D., University of California, Berkeley

Steven C. Hause, Professor Emeritus*
Ph.D., Washington University

Andrew J. Hurley, Professor*
Ph.D., Northwestern University

Charles P. Korr, Professor Emeritus*
Ph.D., University of California, Los Angeles

William S. Maltby, Professor Emeritus*
Ph.D., Duke University

James Neal Primm, Curators' Professor Emeritus*,
Ph.D., University of Missouri-Columbia

Steven W. Rowan, Professor*
Ph.D., Harvard University

Blanche M. Touhill, Professor*, Chancellor Emeritus
Ph.D., Saint Louis University

Robert M. Bliss, Associate Professor*
Dean of Pierre Laclède Honors College
Ph.D., University of Wisconsin

Priscilla Dowden, Associate Professor*
Ph.D., University of Indiana-Bloomington

J. Frederick Fausz, Associate Professor*
Ph.D., William and Mary

Kevin J. Fernlund, Associate Professor*
Executive Director of Western History Association
Ph.D., University of New Mexico

Winston Hsieh, Associate Professor*
Ph.D., Harvard University

Adell Patton Jr., Associate Professor*
Ph.D., University of Wisconsin

Gerda W. Ray, Associate Professor*
Ph.D., University of California, Berkeley

John A. Works Jr., Associate Professor Emeritus*
Ph.D., University of Wisconsin

Deborah Cohen, Assistant Professor*
Ph.D., University of Chicago

Minsoo Kang, Assistant Professor*
Ph.D., University of California, Los Angeles

Laura Westhoff, Assistant Professor*
Ph.D., Washington University

Peter Acsay, Affiliate Assistant Professor*
Ph.D., Saint Louis University

Robert Archibald, Adjunct Professor*
President, Missouri Historical Society
Ph.D., University of New Mexico

Louise B. Robbert, Adjunct Professor Emeritus*
Ph.D., University of Wisconsin

John Hoover, Adjunct Professor*
Director of St. Louis Mercantile Library
M.A., University of Missouri-Columbia

Deborah Henry, Adjunct Assistant Professor
Ph.D., University of Minnesota

*members of Graduate Faculty

General Information**Degrees and Areas of Concentration**

The department offers work in Asian, African, and African American, European, Latin American, Mexican, and United States history from ancient to modern times. At the bachelor's level, the department offers the B.A. in history, and, in cooperation with the College of Education, the B.A. in history with teacher certification and the B.S. in education with an emphasis in social studies.

At the graduate level, the department offers an M.A. in history with work in European, Latin American, Mexican, East Asian, African, African American and United States history. The department also offers the option of an M.A. in history with a concentration in museum studies.

Departmental Honors

Students majoring in history may be awarded departmental honors upon graduation if they have achieved the following: a) at least a 3.2 overall GPA; b) at least a 3.5 GPA for all hours attempted in history courses; and c) an outstanding research paper in the Senior Seminar as certified by the faculty member responsible for directing it.

Undergraduate Studies**General Education Requirements**

History majors must meet the university and college general education requirements. History courses that will satisfy the university's state requirement are:

History 1001, American Civilization

History 1002, American Civilization

History 1003, African-American History

History 1004, The History of Women in the United States

History 2007, The History of Missouri

History 3002, United States History: Revolution and the
New Nation, 1763 to 1815

History 3041, Topics in American Constitutional History

Students may take any language that fulfills the college's foreign language requirement. Majors may not take required

history courses on a satisfactory/unsatisfactory basis. Students enrolled in variable credit reading courses for 5 credit hours must complete a seminar paper.

Degree Requirements

Bachelor of Arts in History Students are encouraged to take programs which combine breadth of coverage with intensity. Two of the following are required:

Courses 1001-1064

History 1001, American Civilization to 1865
History 1002, American Civilization 1865 to present
History 1003, African-American History
History 1004, The History of Women in the United States

Plus two of the following:

History 1030, The Ancient World
History 1031, Topics in European Civilization: The Emergence of Western Europe to 1715
History 1032, Topics in European Civilization: 1715 to the Present

Plus:

Non-Euro/American survey: One 3-hour course

Courses 2000-3004

One course in United States history
One course in European history
One course in Non-Euro-American history
History 4001, Special Readings (one credit hour)
History 4004, Senior Seminar

Three additional 2000 or 3000 level courses

Other

Majors must complete at least 39, but not more than 45, hours in history with no grade below C in major. Courses 4011 and 4012 do not count toward major. After fulfilling the general education and specific major degree requirements, students are to take the remaining 30 hours required to complete the B.A. or B.S. degrees from courses, which the appropriate department has evaluated as being of university-level quality, from one or more of the following or their-quality equivalents at other institutions: anthropology/archaeology, art (appreciation, history, studio), biology, chemistry, communication, criminology and criminal justice, economics, English, foreign languages/literatures, history, mathematics/computer science, music (appreciation, history, performance), philosophy, physics and astronomy/geology, political science, psychology, social work, sociology, business, education, engineering, and interdisciplinary.

Undergraduate majors must complete a residency minimum of 15 hours of 3000 level History courses including History 4001 (1 credit hour) and History 4004 (5 credit hours) in residence.

Minor in History

Students may minor in history by taking 18 hours of history courses as follows:

- 1) **One** course numbered 1001-1064 in each of the following areas: United States history, European history, and Non-Euro-American history
- 2) **One** course numbered 2000-3304, except 4011 and 4012 in **each** of the following areas: United States history, European history, and Non-Euro-American history

No course in which a grade below a C is received shall count toward a minor.

Related Areas

Since history is a broad discipline, it can be combined with serious work in any other discipline. Courses in the humanities, social sciences, languages, and the natural sciences may complement the history program. Students should consult with faculty advisers to select courses suited to their individual interests.

Bachelor of Arts with Teacher Certification

Students majoring in History can receive Social Studies Teacher Certification.

Social Studies

Teacher certification students must complete the major and meet these minimum social science requirements: American history, 12 hours including History/Sec Ed 4013, European or world history, 9 hours including History/Sec/Ed 4014, United States and/or state government, 6 hours including Political Science 3090/Sec Ed 3209, behavioral science, 6 hours; economics, 3 hours; geography, 3 hours; and 2 hours of elective social studies credit. For emphasis area advising, **you must see a History/Social Studies advisor. You must also see an advisor in the College of Education for help with Education requirements.**

For more information, refer to the College of Education section in this Bulletin.

Bachelor of Science in Education: Emphasis in Social Studies

The history requirements are the same as for the B.A. degree except students fulfill the College of Education general education requirements rather than those of the College of Arts and Sciences. For information, refer to the College of Education section in this *Bulletin*.

Graduate Studies

2+3 B.A. and M.A. in History

The 2+3 B.A./B.S. – Ed and M.A. in History enables students of demonstrated academic ability and educational maturity to complete the requirements for both degrees in five years of full-time study. Because of its accelerated nature, the program requires the completion of lower-division requirements (15 hours) before entry into the three-year portion of the program. It also has prerequisites

numbered 5000-5304 for graduate readings courses numbered 6101-6115. When all the requirements of the B.A./B.S. – Ed. and M.A. program have been completed, students will be awarded both the baccalaureate and master's degrees. A carefully designed program can permit a student to earn both degrees within as few as ten semesters.

The combined program requires a minimum of 137 hours, at least 6 of which must be at the senior level (History 4001 and 4004) and 37 of which must be at the graduate level (courses numbered in the 5000 range and in the 6000 range). In qualifying for the B.A. or B.S. – Ed., students must meet all University and College requirements, including the requirements of the undergraduate major. In qualifying for the M.A., students must meet all University and Graduate School requirements, including satisfactory completion of at least 37 credit hours.

Students should apply to the Graduate Director of the Department of History for admission to the 2+3 combined degree program in History the semester they will complete 60 undergraduate credit hours. A cumulative grade point average of 3.1 or higher and three letters of recommendation from faculty are required for consideration. Students will be admitted to the 2+3 program under provisional status until they have completed 30 credit hours in History with a grade point average of 3.0 or higher. After completion of the provisional period, and with the recommendation of the Graduate Director, students can be granted full admission into the program. Students in the 2+3 program begin to pay graduate credit hour fees for all courses applied to the graduate degree after they have earned 107 hours. Students must maintain a grade point average of 3.0 or higher throughout the combined program. Students who officially withdraw from the 2+3 combined degree program will be awarded the B.A. or B.S. – Ed. Degree when they have successfully completed all the requirements for the degree.

Undergraduate History Requirements For Students in the 2+3 Program

A. The following requirements must be completed prior to enrolling in the 2+3 Program:

Two of the following courses numbered 1001-1004:

- History 1001**, American Civilization
- History 1002**, American Civilization
- History 1003**, African American History
- History 1004**, The History of Women in the United States

Plus two of the following:

- History 1030**, The Ancient World
- History 1031**, Topics in European Civilization: the Emergence of Western Europe to 1715
- History 1032**, Topics in European Civilization: 1715 to the Present

Plus

Non-Euro-American survey: One three hour course at the 1041-1064 level.

The following UNDERGRADUATE courses are required for majors in the 2+3 program

History 4001, Special Readings (1)

History 4004, Senior Seminar (5)

Note: B.S.-Ed. Students must also take History 4012, 4013 and 4014.

Graduate History Requirements For Students in the 2+3 Program

The following GRADUATE courses are required at the 5000-5304 level

One course in United States History (3)

One course in European History (3)

One course in Non-Euro-American History (3)

Three additional courses (9 hours)

Courses 6000 level (selected from the

seven fields available). The prerequisite for each 6000 level course for 2+3 program students is one or more 5000-5304 level courses in the field as part of the B.A. (or B.S. Ed.) Program.

1. **Two 6000 level courses** (one of 3 credit hours, one of 5 credit hours) in the first field: total 8 hours
Prerequisite: two 5000-5304 level courses in the field (6 hours)
2. **Two 6000 level courses** (one of 3 credit hours), in the second field: total 8 hours
Prerequisite: one 5000-5304 level course in the field (3 hours)
3. **One 6000 level course** of 3 credit hours in the third field: total of 3
Prerequisite: one 5000 level course in the field 3 hours

To fulfill the 6000 requirements, a student would enroll in 8-10 hours one semester and 9-11 hours the other

Note: With prior approval of the Graduate Director, a student may write a M.A. thesis (6 credit hours). Students writing M.A. theses may substitute three-three-hour 5000-level courses for the two five-credit hour courses in 1 and 2.

Regular M.A. Degree Requirements

The Department of History offers two regular options for graduate study, the Master of Arts in History and the Master of Arts in History with Concentration in Museum Studies. These options are described below in separate sections.

Master of Arts in History

The Department of History offers students two ways of completing the master of arts degree: one path of study emphasizes depth of knowledge and research competence acquired through writing a substantial master's thesis. The second emphasizes breadth of historical knowledge acquired through graduate course work and the writing of research papers. Both paths include a core of substantive courses in history (see Core) to which the student adds either a thesis

(see Thesis) or additional research papers and seminars (see Research Papers).

The M.A. program offers all students intermediate training preparatory to doctoral programs, advanced training leading to teaching and other careers, and disciplined advanced work.

The department offers study in European history, United States history, East Asian history, Latin American history, African history, and African American history. Within these areas of study, students may specialize in the following fields:

Europe to 1715
Europe since 1715
Latin America
United States to 1865
United States since 1865
China and Japan since 1800
Africa and African American

Admission Requirements

Applicants must meet several departmental admission requirements in addition to the general criteria of the Graduate School. The applicant's undergraduate studies need not have been in history, but they must demonstrate high academic potential. Normally, only students with a 3.2 grade point average in their undergraduate major are admitted; most successful applicants have higher grades.

Applicants must submit three letters of recommendation, preferably from former teachers, and a sample of their written work. The departmental Graduate Committee bases its admission decisions upon the undergraduate transcript, the letters of recommendation, and the sample of written work.

Core

All candidates for the M.A. degree in history must complete a core of 26 hours of course work (excluding thesis credit), with no more than nine hours of history and related fields at the 5000 level. This 26-hour core must include seven courses at 3 credit hours each (21 hours in all), and one 5-credit-hour writing seminar consisting of a 2-credit-hour research paper supplement to a 3-credit-hour, 6000 level history readings course.

To earn the 26-hour core, candidates select three fields of study, the first with a minimum of four courses (each at 3 credit hours or more), the second and third with a minimum of two courses each (at 3 credit hours or more).

In addition to this core, each candidate must select one of the two following degree options:

1) Thesis Option--32 hours total

In addition to the core, the candidate choosing this option must enroll for 6 hours of thesis credit and submit an acceptable thesis. The thesis is based on original research in primary sources. Normally, theses do not exceed 100 pages

of text. Candidates receive a grade for the thesis upon its approval by an advisory committee. The committee consists of professors selected by the candidate after consultation with the major professor. One member of the committee must be outside the candidate's general area of study, and one may be outside the history department.

The advisory committee conducts an oral examination on the thesis during the candidate's last semester of residence.

The committee decides whether the candidate shall pass, fail, or fail with the option to repeat the oral examination at a later date. Students may not take the oral examination more than twice. The second examination must be held no less than one and no more than two semesters following the date of the first examination. Summer session may be counted as a semester under this procedure, but students should be aware of the difficulties involved in assembling faculty committees during the summer.

Thesis candidates must demonstrate competence in one foreign language or in quantitative methods as applied to historical study. Candidates shall demonstrate foreign language competence by translating, with the use of a dictionary, 500 words in one hour. A member of the history faculty will conduct this examination. That faculty member will choose the test for translation. Candidates shall demonstrate quantitative methods competence by satisfactory completion of either Psychological Statistics 2201 or Sociological Statistics 3220, or their equivalent.

2) Research Paper Option-36 hours total

To complete this option, the candidate must complete two 5-credit-hour seminars (each consisting of a 6000 level reading seminar plus 2 credit hours of supplementary work on a substantial research paper), in addition to the core. The candidate may choose a fourth field in addition to the three already represented in the core to complete this option.

Master of Arts in History (Museum Studies) and Graduate Certificate in Museum Studies

These options are intended for students planning to pursue professional careers in museums. In addition to the core requirement of substantive courses in history, the Museum Studies program includes intensive training in the theory and practice of museology. This innovative program is a collaboration between the Department of History, Department of Anthropology, Department of Art and Art History, the Missouri Historical Society and the St. Louis Mercantile Library. It is taught by a combination of professors and practicing professionals from St. Louis-area museums. Recognizing that the museums field is in a period of rapid change, the program is designed to train students for leadership in the emergence of a new paradigm of museology that focuses on relationships between museums and the people and communities that they serve.

For most students this will be a terminal master of arts degree, fully preparing graduates for immediate entry into

museum careers in a variety of positions. While the core requirement focuses on history studies, the museological training is applicable to employment in any type of museum.

Admission Requirements

Applicants wishing to enter the Museum Studies concentration must apply specifically for that concentration; successful application for the general M.A. program in history does not automatically provide access to the museum studies program. Applications for the museum studies concentration will be accepted only for the fall semester. Because of the prescribed sequence of course work, no midyear entry into the program will be allowed.

In addition to the general criteria of the Graduate School, applicants for the Museum Studies concentration must meet several additional criteria of the Department of History and the museum studies program. Applicants' undergraduate studies need not have been in history, but they must demonstrate high academic potential. Normally, the history department admits only students with a 3.2 grade point average in their undergraduate major; most successful applicants have higher grades. Applicants must submit three letters of recommendation, preferably from former teachers and/or employers, and a sample of their written work. The sample may or may not be academic work, and length is not a consideration. Besides these departmental requirements, applicants must submit the Museum Studies Supplemental Application. The supplemental application includes a statement of intent for pursuit of a museum career.

The departmental Graduate Committee and the director of the museum studies program will base their admissions decisions upon the undergraduate transcript, the letters of recommendation and the sample of written work.

Applications for the museum studies program must be received by the university no later than March 1.

Museum Studies Curriculum—39 hours total

All candidates for the M. A. in History with a Concentration in Museum Studies must complete Hist 6134, 6135, 6136, and 6137. These courses are cross listed under the same numbers in the Anthropology Department and the Art and Art History Department. Students may enroll through the department of their choice. All candidates must also complete Art 5588 Museum Education and Visitor Research and Anthr 6139 Practicum in Exhibit and Program Development. Together, these courses provide a solid foundation in the theory and history of museology and in practical skills for museum work. As a final requirement, candidates must complete Hist or Anthr or AH 6138. This exit project will be the capstone demonstration of competence in museum studies. The specific nature of this demonstration will be customized to the interests and career aspirations of each student. It may take the form of a traditional thesis, an exhibit project, or some other appropriate form, as approved in advance by the candidate's advisory committee.

In addition to these requirements, all candidates must complete 15 hours of elective history course work, with no more than 6 hours of history at the 3000 level except Hist 4004. Museum Studies students will take courses distributed in any proportion between the fields of "United States to 1865" and "United States Since 1865." Exceptions to this requirement (e.g., selections of courses from another field, such as European or African history) must be approved in advance by both the director of the Museum Studies Program and the graduate coordinator of the History Department.

Graduate Certificate in Museum Studies (19 hours)

A very limited number of slots may be available for students who wish to pursue only the Graduate Certificate in Museum Studies without seeking the M.A. in History. In most cases, these will be students who already hold an advanced degree and are currently working or planning to work in a museum but who have had no formal training in museum studies. Candidates for the Graduate Certificate must complete: Hist 6135, 6136, 6137, and 6138, AH 5588, and Anthr 6139. Contact the director of the Museum Studies Program for availability of slots in this option and for special application procedures.

Career Outlook for B. A. and M. A. graduates

An important rationale for the discipline of history is its centrality to the university curriculum and to the life experience. The ability to put events or developments into the context of the past is useful as well as pleasurable. Responses to a questionnaire sent to history graduates have indicated that alumni in a wide variety of fields are as conscious of and appreciative of their training in history as those who have chosen it as a profession. Men and women in business, lawyers, bankers, librarians, and foreign service officers have all found it relevant to their careers. Study and research in history sharpens organizational and writing skills important to success in business and the legal profession. A growing interest in local history has created employment opportunities in museum, archival, and preservation work.

Career Outlook for M. A. with Concentration in Museum Studies

There are more than 8,000 museums in the United States. History museums constitute more than half of that total, and employ approximately one-third of the 150,000 paid staff working in U. S. museums. While job requirements vary widely among individual museums and specific professional roles, the M.A. degree offered by this program qualifies graduates for a wide range of career opportunities, in history museums and in other types of museums as well. The Museum Studies Program provides students with placement assistance and counseling and with access to a wide range of information on career opportunities in the field, and program faculty use their extensive networks in the field to help identify opportunities and to place students.

Course Descriptions

Students enrolled in variable credit reading courses for 5 credit hours must complete a seminar paper.

Students who have earned 24 or more semester hours of credit at any accredited post-secondary institutions(s) before the start of the fall 2002 semester must meet the general education requirements stipulated in the UM-St Louis 2001-2002 Bulletin. The following courses fulfill the Social Sciences breadth of study requirements as described in that Bulletin. 1001, 1002, 1003, 1004, 1030, 1031, 1032, 1041, 1042, 1051, 1052, 1061, 1062, 1063, 1064, 2007, 2008, 2219, 2800, 3000, 3001, 3002, 3003, 3004, 3005, 3006, 3011, 3012, 3021, 3022, 3031, 3032, 3041, 3042, 3043, 3044, 3045, 3050, 3053, 3071, 3072, 3073, 3081, 3082, 3083, 3084, 3085, 3086, 3092, 3093, 3094, 3095, 3101, 3102, 3103, 3201, 3202, 3301, 3302, 3303, 3304, 3322, 4001, 4004.

The following courses fulfill the Cultural Diversity [CD] requirement; 1041, 1042, 1051, 1052, 1061, 1062, 1063, 1064, 3032, 3101, 3102, 3103, 3201, 3202, 3301, 3302, 3303, 3304.

The following courses fulfill the state [ST] requirement: 1001, 1002, 1003, 1004.

1000 Selected Topics in History (1-3)

Prerequisite: Consent of Instructor. May be repeated with consent of instructor

1001 American Civilization (3) [ST,SS,C]

Evolution of the cultural tradition of the Americas from the earliest times to the mid-nineteenth century, with emphasis on the relationship of ideas and institutions to the historical background.

1002 American Civilization (3) [ST,C,SS]

Continuation of Hist 1001 to the present. Course fulfills the state requirement. Hist 1001 or Hist 1002 may be taken separately.

1003 African-American History (3) [ST,V,SS]

A survey of African-American history from the beginning of the European slave trade to the modern Civil Rights era.

1004 The History of Women in the United States (3) [ST,C,SS]

Same as WGS 1004. A survey of women's history from the colonial era to the present.

1030 The Ancient World (3) [C,SS]

Survey of ancient history in the near east, the Aegean, the central and western Mediterranean. Themes: politics and economy, war and society, culture, including art, literature, technology, religion and philosophy. The chronological span is from the neolithic period (7500-3000 B.C.) in the near east to the fall of the Roman Empire in the fifth century A.D.

1031 Topics in European Civilization: Emergence of Western Europe to 1715 (3) [C,SS]

Lectures and discussions on the development of Western European society and tradition from approximately 800 to 1715.

1032 Topics in European Civilization: 1715 to the Present (3) [C,SS]

Lectures and discussions on the development of Western European society and tradition from 1715 to the present. Either Hist 1031 or Hist 1032 may be taken separately.

1041 East Asian Civilization (3) [CS,SS]

The development of Asian civilization from earliest times to the Manchu conquest.

1042 East Asian Civilization (3) [CS,SS]

Continuation of Hist 1061 with emphasis on the Asian response to the Western incursion. Either Hist 1041 or Hist 1042 may be taken separately.

1051 Latin American Civilization (3) [CD,C,CS]

A survey of selected topics important in the development of Latin America from pre-Columbian times to the twentieth century.

1052 Mexican Civilization (3) [C,SS,CD]

This course will focus on the history and culture of Mexico from the Aztecs to the mid-twentieth century. Among the topics to be covered are: the Aztecs, Cortez and the Conquest of Mexico, colonial institutions and culture, the obtaining of political independence, disorder and dictatorship in the nineteenth century, the Mexican Revolution, contemporary Mexico.

1061 African Civilization to 1800 (3) [C,SS,CD]

Introduction to cultural history from the emergence of early mankind to the abolition of the Atlantic slave trade. This course fulfills the Cultural Diversity requirement.

1062 African Civilization Since 1800 (3) [C,SS,CD]

Survey of African initiative and response in the period spanning the loss and reassertion of independence. Hist 1061 or Hist 1062 may be taken separately.

1063 The African Diaspora to 1800 (3) [C,SS,CD]

An examination of the major developments which have shaped the history of Africans and their descendants in the Atlantic, Mediterranean, and Indian Ocean areas from the earliest times to 1800. The course will survey the political, social, and religious foundations of the African continent and include a comparative analysis of other diasporas. Special attention will be given to themes and issues associated with: slavery, creolization, multiracialism, transformation from heterogeneous crowds to new homogeneous communities, and cultural linkages between Africans and their descendants in the Atlantic Communities.

1064 The African Diaspora Since 1800 (3) [C,SS, CD]

An examination of the major developments which have shaped the history of Africans and their descendants in the Atlantic world from 1800 to contemporary times. The course will include a comparative analysis of other diaspora groups. Special attention will be given to themes and issues associated with: slavery, multiracialism, cultural clocks, the social transformation from heterogeneous crowds to the formation of new homogeneous communities, the new elite, and the modern cultural linkages between Africans and their descendants in the Atlantic Communities.

1175 Arts and Ideas (3)

Same as Art & Art History 1175, English 1175, Music 1175, Philosophy 1175, Theatre & Dance 1175. An interdisciplinary course tied to the semester's offerings at the Blanche Touhill Performing Arts Center as well as other events on campus featuring the visual arts, literature, music, and film. Each semester the course will provide background on the arts in general and will critically examine particular performances and offerings. Special themes for each semester will be selected once the Touhill schedule is in place. Students will be expected to attend 6-8 performances or exhibitions. Can be repeated once for credit.

2000 Selected Topics in History (1-3)

Prerequisites: Consent of instructor. May be repeated for credit with consent of instructor.

2007 History of Missouri (3) [ST]

Prerequisite: Junior standing or the consent of the instructor. Lecture and readings. Seventeenth-century Spanish and French explorations and interaction with the Indians; settlement and organization of the Louisiana territory; lead mining and the fur trade; the Louisiana Purchase; the Missouri territory; the struggle for statehood and slavery; antebellum politics; banking and internal improvements; westward expansion; Civil War and reconstruction; postwar agrarian politics, industrialization; Irish, German, and southern European immigration; the Progressive reforms--political and economic change; and twentieth-century social changes and political developments.

2008 The History of St. Louis (3)

Prerequisite: Junior standing or consent of the instructor. This course will provide an overview of the history of the St. Louis metropolitan region from its founding in 1764 to the present. Main topics will include the St. Louis region before the Europeans, forces leading to the founding of the city, St. Louis as an "urban frontier," the Age of Steam on water and rail, the questions of slavery and the Civil War, St. Louis in the Gilded Age, the World's Fair, early efforts at city planning, impact of the automobile, St. Louis during the Depression and World War II, post war suburbanization, urban renewal St. Louis-style, school desegregation, the Schoemehl years, the emergence of St. Louis "Edge Cities," and St. Louis 2004.

2102 Introduction to Women's and Gender Studies (3)

Same as WGS 2012, Social Work 2102, and Sociology 2102. This core class is required for all Women's and Gender Studies Certificate earners. This class introduces students to cultural, political and historical issues that shape gender. Through a variety of disciplinary perspectives in the humanities, social sciences, and natural sciences, the course familiarizes students with a diverse female and male experiences and gendered power relationships.

2117 Greek History and Culture (3)

Same as Anthr 2117. Greek Civilization has had a deep impact on contemporary society in art, social, political, and economic organization; philosophy; law; medicine; and science. This course covers major aspects of Greek history and culture from antiquity to the present. It considers the major political and military events of Greek history, as well as important aspects of Greek culture, including sports and the history of the Olympic Games, literature, philosophy, and mythology.

2219 U.S. Labor History (3)

Examines the history of work and the working class in the United States. It focuses on the transformation of the workplace, the evolution of working class consciousness, the development of the labor movement, the role of race, gender and ethnicity in uniting or dividing the working class, and the nature of labor's relations with other social groups in the political arena. Particular emphasis on the political, and economic conditions and strategies of periods when working class power was growing.

2300 The People's Century, Part I (3)

The course provides unique insight into the turbulent events of the last 100 years by combining rare archival film footage with the testimony of ordinary people who lived through the century's sweeping changes and who recount their firsthand experiences.

2800 History of American Economic Development (3) [MI]

Prerequisites: Econ 1000 or 1001 or consent of instructor. Same as Econ 2800. Uses economic concepts to explain historical developments in the American economy, beginning with hunter-gatherers who crossed the Bering land bridge around 12,000 B.C. Main topics include Native American economies, European exploration and conquest, the colonial economies, indentured servitude, the American Revolution, the U.S. Constitution, westward expansion, transportation, the Industrial Revolution, state banking and free banking, slavery, the Civil War, post-bellum agriculture, the rise of big business and antitrust, banking panics, the Federal Reserve Act, the First and Second World Wars, the New Deal, and the growth of government in postwar economy.

3000 Selected Topics in History (3)

Prerequisite: Junior standing or consent of instructor. Special topics in history. The course may be repeated for credit with the consent of the instructor.

3001 United States History: Colonial America to 1763 (3)

Prerequisite: Junior standing or consent of instructor. English background of colonization; rise of distinctive New England and Southern societies; English colonial policy to the Peace of Paris.

3002 United States History: Revolution and the New Nation, 1763 to 1815 (3) [ST]

Prerequisite: Junior standing or consent of the instructor. The American Revolution and the creation of the new nation. The young republic and the development of the first American party system.

3003 United States History: Nationalism and Sectionalism, 1815 to 1860 (3)

Prerequisite: Junior standing or consent of the instructor. The Era of Good Feelings, the Age of Jackson, manifest destiny, the political and social developments of the antebellum period relating to the growth of sectionalism and the developing antislavery crusade.

3004 United States History: The Civil War Era, 1860-1900 (3)

Prerequisite: Junior standing or consent of the instructor. The Civil War, Reconstruction, industrial and urban expansion and their impact on American life.

3005 United States History: 1900-1940 (3)

Prerequisite: Junior standing or consent of the instructor. The economic, political, and social developments and crises of the mature industrial United States. The growing importance of foreign relations.

3006 United States History: 1940 to the Present (3)

Prerequisite: Junior standing or consent of instructor. The economic, political, and social developments and crises of postindustrial United States. The role of foreign affairs in American life.

3007 United States Labor History (3)

Prerequisites: Junior standing or consent of instructor. Explores advanced topics in the history of labor in the U.S. including: globalization and labor process, changing meaning and function of gender, labor/community organizing, immigration and free trade, race and labor market segmentation.

3009 St. Louis and the West (3)

Prerequisites: Junior standing or consent of instructor. An examination of the role St. Louis played in the evolution of the North American West, both in the United States and Canada, from the fur trade of the late eighteenth century to the opening of the Texas oil fields in the early twentieth century. Special emphasis will be given to competition between river and rail transportation corridors, and hence to the rivalry that developed between St. Louis and Chicago.

3011 The American West: Gateways and Corridors (3)

Prerequisites: Junior standing or consent of instructor. An exploration of the history of the American West from the 1750s to present, with emphasis on the role of transportation. Urban gateways such as St. Louis and San Francisco and transportation corridors such as the Missouri River and the Santa Fe and Oregon trails will be of particular importance.

3012 The Indian in American History, 1600-1900 (3)

Prerequisite: Junior standing or the consent of instructor. Investigates Native American encounters with non-Indian peoples between 1600 and 1900, analyzing how traditional Indian cultures changed to meet a variety of new challenges introduced to North America by Europeans and Africans. The approach will be interdisciplinary and ethnohistorical with emphasis placed on case studies of important native nations at key turning points in their history.

3013 The Modernization of the United States (3)

Prerequisites: Junior standing or consent of instructor. Studies in the economic, political and social development and crises of the maturing industrial United States between 1877 and 1940, and the growing importance of foreign relations.

3014 History of the Fur Trade, 1600-1850 (3)

Prerequisites: Junior standing or permission of the instructor. This course surveys the history of fur trading in North America and provides in-depth analyses of specific St. Louis case studies in both the French colonial period and in the era of American settlement and control. The focus on St. Louis and its hinterland emphasizes traditional and recent revisionist historiography that underscores the fur trade's significant role in forging multicultural alliances, producing international competitions (and conflict), altering ecosystems, stimulating agricultural and industrial economies and influencing American territorial expansion across the continent.

3021 U.S. Urban History (3)

Prerequisite: Junior standing or consent of the instructor. The physical and spatial growth of U.S. cities from colonial times to the present with special attention to the impact of industrialization, public policy, and advances in transportation technology.

3022 Comparative Urban History (3)

Prerequisite: Junior standing or consent of the instructor. Reviews and analyzes the development of cities from a North American perspective focusing on the 19th and 20th centuries. Attention will be given to the issue of why North American cities appear and function differently from urban areas on other continents, including Europe, Asia, and South America.

3031 History of Women in the United States (3)

Prerequisite: Junior standing or consent of the instructor. Same as WGS 3031. Development of women's economic, political, and social role in the United States with special emphasis on the nineteenth and twentieth centuries; women

and work; women and the family; women and reform movements; women and education; feminist theorists and activists; images of women.

3032 History of Women in Comparative Cultures (3) [CD]

Prerequisite: Junior standing or consent of the instructor. Same as WGS 3032. An introduction to the historical development of women's status in a variety of cultures and periods within the areas of Africa, Europe, the Far East, Latin America, and the Middle East. The course analyzes women's political, economic, familial, and sexual roles and the economic, demographic, ideological, and political forces which promoted change and continuity in those roles.

3033 Sexuality And Gender Theory (3)

Prerequisites: Junior standing or consent of instructor. Same as WGS 3033. This course examines the ways in which contemporary sexuality and gender theory has challenged and changed the study of culture and history. The course introduces students to sexuality and gender theory in late twentieth and early twenty-first century context [s]. It then explores dynamic links between theory and the formal structures of political economy as well as the informal structures of everyday life.

3034 History of Sexuality (3)

Prerequisites: Junior standing or consent of instructor. Same as WGS 3034. This course locates sexuality at the center of history and examines its impact over time on politics, society, culture and economics. In particular, the course focuses on changing definitions of sexual deviance, the historical evolution of formal and informal regulations of sexual practices and on the manner in which sex has been deployed in broader historical struggles involving gender, race, class migration and state building.

3041 Topics in American Constitutional History (3) [ST]

Prerequisite: Junior standing or consent of instructor. Origins and development of principal institutions and ideas of American constitutional system; role of Constitution and Supreme Court in growth of the nation; important Supreme Court decisions; great American jurists and their impact on the law; historical background to current constitutional issues.

3042 U.S. Social Movements in the 20th Century (3)

Prerequisite: Junior standing or the consent of instructor. This course challenges students to analyze the historical sources, objectives, and techniques of social movements initiated by racial minorities, women, gays and lesbians, evangelical Christians, and many others.

3043 History of Crime and Justice (3)

Prerequisite: Junior standing or consent of the instructor. Same as CCJ 3043. The analysis, development, and change in philosophies and responses to crime. Emphasis on major forms and definitions of crime, the emergence of modern policing, the birth of the prison and the juvenile court.

3044 American Military History to 1900 (3)

Prerequisite: Junior standing or consent of instructor. A study of American military institutions from colonial times to 1900. The impact of the military upon major aspects of American life. The place of war in American history to 1900.

3045 American Foreign and Military Affairs, 1900-Present (3)

Prerequisite: Junior standing or consent of instructor. A survey of American foreign and military affairs since 1900, with particular emphasis on the major wars during the period and the Cold War Era. Consideration of the nation's changing place in a changing world.

3050 Topics in African-American History (3)

Prerequisite: Junior standing or consent of instructor. Will explore a salient topic in African-American history. Such historical documents as personal narratives, letters, government documents, and autobiographies as well as monographs, articles, and other secondary sources will be used to explore topics such as slavery and slave culture in the United States; blacks and America's wars; the African-American intellectual tradition; or, African-Americans and the Great Migration.

3051 African-American History: From Slavery to Civil Rights (3)

Prerequisite: Consent of the instructor. This course examines the impact of region, gender, and class on black activism by focusing on topics such as remembering slavery and emancipation, institution and community building during segregation, changing strategies in politics and protest, and the emergence of the direct action civil rights movement.

3052 African-American History: From Civil Rights to Black Power (3)

Prerequisite: Consent of instructor. A seminar on the activities, ideas, movement centers, and personalities that created the Civil Rights and Black Power movements in the U.S. from the 1950s through the 1970s. Some familiarity with the broad contours of U.S. history is presupposed. Special attention will be devoted to the roles of the African-American masses, college students, and women, and to the points of conflict cooperation, and intersection between African-America and the larger American society.

3053 African-American Women's History (3)

Prerequisite: Junior standing or consent of the instructor. Same as WGS 3053. This course introduces some of the themes of African-American women's history. By examining the impact of region, gender, and class on African-American women's experiences across time, the course highlights black women's applied and theoretical contributions to feminist politics and activism as well as the black struggle for freedom and equality. Topics covered include: slavery and emancipation, institution and community building, the family and work, electoral politics and direct action protest, civil rights, and contemporary issues.

3062 Sport and Society (3)

Prerequisite: Junior standing or the consent of the instructor. This course looks at sport in Western society as a form of social history. The first section of the course covers from early Olympic games through the end of the eighteenth century. The major part of the course deals with the role of organized sport in Europe and the United States since 1840, the political and economic aspects of sports, and the growth of international sports.

3071 Medieval England (3)

Prerequisite: Junior standing or consent of the instructor. A brief summary of the Anglo-Saxon heritage and the impact of the Norman Conquest, followed by an investigation of the institutional, social, and legal evolution of the realm of England. English development will be viewed in its European context.

3072 York and Tudor England (3)

Prerequisite: Junior standing or consent of instructor. The turmoil over the monarchy and consolidation of the Tudor dynasty. A study of the English Reformation and the political and economic changes of the sixteenth century.

3073 Stuart England (3)

Prerequisite: Junior standing or consent of instructor. A study of the English revolutions, religious controversy, and the rise of parliamentary power; the social and economic changes of the century; and the role played by England in the European struggles of the period.

3081 Rome: The Republic and Empire (3)

Prerequisite: Junior standing or consent of the instructor. A survey of the development of Roman political and cultural life from the legendary founding of the city in central Italy in 753 to the death of the Emperor Justinian in 565 A.D.

3082 History of the Church: The Middle Ages (3)

Prerequisite: Junior standing or consent of the instructor. A topical study of the Christian church in Europe as an autonomous and central institution from the sixth century through the reformation crisis. Special attention will be given to the relations between the church and the secular world, and the contributions of medieval Christianity to the development of European institutions and ideas.

3083 Europe in Early Middle Ages (3)

Prerequisite: Junior standing or consent of the instructor. The end of the Roman Empire as a universal entity; the successor states of the Mediterranean and Northern Europe; the emergence of a Western Christendom under the Franks; the development of feudal states; the Gregorian reforms; the Crusades; the revival of education and learning in the twelfth century.

3084 Europe in the High and Late Middle Ages (3)

Prerequisite: Junior standing or consent of the instructor. Medieval society at its political, economic, and intellectual zenith; the crisis of the later Middle Ages; the papal schism

and the development of national particular churches within Catholicism; and the rise of estate institutions.

3085 The Age of the Renaissance (3)

Prerequisite: Junior standing or consent of the instructor. The Italian and Northern Renaissance as a distinct age; political, socioeconomic, intellectual, religious, and artistic movements attending the decline of medieval society, and the transition to the early modern period.

3086 The Age of Reformation (3)

Prerequisite: Junior standing or consent of the instructor. Religious, intellectual, political, and socioeconomic developments of the sixteenth century.

3089 History of Ideas in the West (3)

An examination of some of the more important ideas and debates that shaped the Western world. Topics include Platonic versus Aristotelian models of the universe, Medieval synthesis and the challenge of Renaissance Naturalism, the Scientific Revolution, the political ideas of Thomas Hobbes, John Locke, and Jean-Jacques Rousseau, Romanticism, Marxism, Darwinian evolution, Freudian psychology, existentialism, structuralism and post-structuralism.

3091 European Social History Since 1715 (3)

Prerequisite: Junior standing or the consent of the instructor. This is a survey course examining the life of ordinary people in modern Europe. It begins with an examination of economic conditions and the social classes that derive from them. Most of the course explores the conditions of every day life. Topics include demography, marriage and the family, sexuality, children and old age, the roles of women, disease and death, diet, drink and drugs, clothing and housing, leisure and entertainment, and popular attitudes.

3092 Europe, 1900-1950: War and Upheaval (3)

Prerequisite: Junior standing or consent of the instructor. The impact of World Wars I and II and the search for equilibrium.

3093 Europe, 1950-Present: Peace and Prosperity (3)

Prerequisite: Junior standing or consent of instructor. A survey of the main social, economic, political, military, and cultural trends since the outbreak of World War II.

3094 France in the Modern Age (3)

Prerequisite: Junior standing or consent of instructor. The history of Republican France. Topics discussed include the creation of a liberal-democratic government; the scandals and crises of the Third Republic; the Dreyfus affair; the rise of imperialism, socialism, and feminism; the impact of World War I, the popular front, defeat, collaboration, and resistance during World War II; and the reestablishment of France as an important power.

3095 Germany in the Modern Age (3)

Prerequisite: Junior standing or consent of instructor. The course deals with whether or not the Third Reich should be considered the culmination of German history. Problems of national unification, economic development, representative government, and cultural modernism will be considered.

3096 Britain in the Modern Age (3)

Prerequisites: Junior standing or consent of the instructor. The economic, social, and political development of modern Britain, 1750 to present.

3097 History of Spain (3)

Prerequisites: Junior standing or consent of instructor. A survey of Spanish history from the fifteenth century to the present, emphasizing its period of imperial greatness and examining the effects of empire on national development.

3099 Eighteenth Century European History (3)

This course offers intensive study of Europe in the period between the Glorious Revolution in England in 1688 and the fall of Napoleon in 1815. Particular emphasis will be placed on the theme of the rise of the modern. Specifically, the course will examine the struggle by intellectuals, politicians, and military figures to move Europe forward from the old regime system. Particular emphasis will be placed on the works of Voltaire, Rousseau, Locke, and Paine.

3101 Modern Japan: 1850 to Present (3) [CD]

Prerequisite: Junior standing or consent of instructor. The economic, social, and political development of modern Japan.

3102 Modern China: 1800 to Present (3) [CD]

Prerequisite: Junior standing or consent of instructor. The economic, social, and political development of modern China.

3103 Modern History of the Asian Pacific Rim (3) [CD]

Prerequisite: None. A survey course on the modern history of the broad economic region of East and Southeast Asia as well as the region's interaction with the United States. The course is designed for students who need to understand the political and economic dynamics of the countries around the Pacific Basin and the historical roots of various problems.

3201 History of Latin America To 1808 (3) [CD]

Prerequisite: Junior standing or consent of instructor. Latin America from the pre-Columbian civilizations to 1808, stressing social, political, and economic institutions in the Spanish colonies.

3202 History of Latin America Since 1808 (3) [CD]

Prerequisite: Junior standing or consent of instructor. Emphasis on the attainment of political independence and social, political, and economic developments of the nineteenth and twentieth centuries in Latin America.

3301 West Africa to 1800 (3) [CD]

Prerequisite: Junior standing or consent of instructor. This course discusses both the history and historiography of Africa's most populous and ethnically diverse region. Beginning with the prehistoric era prior to the desiccation of the Sahara, the course explores climatology and population movement, changes in food production and technology, state formation, the spread of Islam, cultural and political diversity in the forest region, domestic slavery, the Atlantic slave trade and abolition.

3302 West Africa Since 1800 (3) [CD]

Prerequisite: Junior standing or consent of instructor. Analysis of change in the savanna/forest societies occasioned by Islamic reform and the end of the slave trade, the imposition of colonial rule and African response, growth of nationalist protest, and post independence development

3303 African Diaspora to 1800 (3) [CD]

Prerequisite: Junior standing or consent of instructor. Comparative in scope, the course examines major themes in West and Central Africa and their impact on the history of Africans in the Atlantic diaspora up to 1800. Themes include: slavery, multiracialism, economics of the South Atlantic system, political dimensions and the social transformation from heterogeneous crowds to new and homogenous communities. Linkages between Africans and their descendants in the Atlantic communities of Latin America, the Caribbean, as well as North America will be stressed.

3304 African Diaspora Since 1800 (3) [CD]

Prerequisite: Junior standing or consent of instructor. Comparative in scope, this course uses a comparative methodology to examine the major themes in West and Central Africa and their impact on the history of Africans in the Atlantic diaspora after 1800.

3322 Advanced History of Natural History: Systematics, Ecology, and Natural History in the Strict Sense (3)

Prerequisites: At least 3 biology courses beyond the introductory level or permission of instructor. Topics include principles of ethnobiological classification, Aristotle and Theophrastus and their incorporation in western science, and natural history in the Renaissance. Focuses on breakup of natural history after 1750; integration of natural history and botany in popular culture and its consequences for professional disciplines; relationships between new botany and classification botany, among botany, zoology and biology at the end of 19th century, and between field and laboratory science; and conflict between systematic schools in later 20th century. Three hours of lecture per week. Paper on topic of student's choice required. Credit not granted for more than one of Biol 3322, Hist 3322, and Biol 5322.

3401 World History to 1500 (3)

Prerequisites: Junior standing or consent of the instructor. A survey of the history of humankind to 1500. In addition,

interregional, comparative, cross cultural, and historiographical topics will be considered.

3402 World History Since 1500 (3)

Prerequisites: Junior standing or consent of the instructor. A survey of the history of humankind since 1500. In addition, interregional, comparative, crosscultural, transnational, and historiographical topics will be considered.

3770 Introduction to Transportation (3)

Prerequisites: Junior standing or consent of instructor. Introduction to Transportation provides an overview of the transportation sector, including history, providers, users, and government regulation. The importance and significance of transportation, the operational aspects of transportation modes of rail, water, motor, air, and pipeline: the demand and supply of transportation, and the managerial aspects of these modes of transport will be covered in the course.

3771 History of American Railroads in Global Perspective (3)

Prerequisites: Junior standing or consent of instructor. This course examines how railroads, the nation's "first big business," shaped the history of the United States from the 1830s to present. Topics to be covered include railroad development and economic power, tourism and the evolving technology of transportation. These topics will be developed in a transnational context with a primary focus on comparisons among the United States and Canada and Great Britain. To a more limited degree, comparisons will be developed among the United States and Australia and Latin America

3772 History of Aviation in American Life (3)

Prerequisites: Junior standing or consent of instructor. This course focuses on the history of aviation in the United States from balloon flights preceding the Wright brothers through the terrorist attacks in September 2001 with emphasis upon how aviation and aviators have influenced American society and culture. Themes include the evolution of aviation technology, the growth of the commercial/military aviation/aerospace industries, issues of race and gender in aviation, the development of America's commercial airlines, aviation's influence upon American art, films, advertising, and literature, the significance of the space race, and the role of aerial weapons of war.

3773 Urbanization And Transportation (3)

Prerequisites: Junior standing or consent of instructor. This course provides an overview of urbanization and transportation in the United States. Besides examining the history of urbanization and transportation, this course offers comparisons between contemporary international urban areas for the purpose of placing the US experience in context. Additionally, the course covers key issues surrounding the planning, development, and consequences of infrastructure facilitating the movement of people and freight in the urban setting, such as financing, transport technologies, political policies, economic growth, and demographic trends.

4001 Special Readings (1-10)

Prerequisite: Consent of the instructor. Independent study through readings, reports, and conferences.

4002 Collaborative Research (3-6)

Prerequisite: Consent of instructor. Faculty-student collaboration on a research project designed to lead toward publication of a jointly authored article. Faculty member will direct the research.

4003 Internship (3-6)

Prerequisites: Consent of supervising instructor and institution offering the internship. Supervised practicum in a museum, historical agency, and other institution offering an opportunity for hands-on experience in public history. This elective course supplements but does not replace requirements for baccalaureate degree in history. May not be taken for graduate credit.

4004 Senior Seminar (5)

Prerequisite: Consent of department and presentation of three examples of formal written work submitted in prior upper-division courses in history. Studies in historical methodology and historiography. Directed readings, research, and writing leading to the production of an original piece of historical scholarship. An exit interview is required. Senior Seminar is required for all history majors. May not be taken for graduate credit.

4011 Curriculum and Methods of Teaching Secondary School History and Social Studies (3)

Same as Sec Ed 4011. Prerequisite: Junior standing and Tch Ed 3310. A study of the scope and sequence of history and social studies courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. This course must be taken in conjunction with Sec Ed 3289, Secondary Education Professional Internship. May not count toward history hours required for history major. Must be completed prior to student teaching. This course must be completed in residence. Not available for graduate credit.

4012 Social Studies Teaching Seminar (1)

Same as Sec Ed 4012. Prerequisite: Must be enrolled concurrently in student teaching. Addresses the application of teaching strategies, and instructional technology in the classroom setting. Offered concurrently with Secondary School Student Teaching, Sec Ed 4990. Not available for graduate credit.

4013 United States History for the Secondary Classroom (3)

Prerequisites: Tch Ed 3310 or consent of the instructor. Same as Sec Ed 4013. This course is required for Social Studies certification. Adapts the themes and subject matter of American history to the secondary classroom and trains teachers in techniques particularly designed to maximize the use of primary sources, foster critical inquiry, and encourage knowledge of subject matter. Particular emphasis will be

placed on defining the broad and connecting themes of American history, on expanding bibliography, and on choosing methods of inquiry for use in an interactive classroom. Cannot be counted towards the minimum 39-hour history major requirement, but can be counted towards the 45-hour maximum and for Social Studies Certification. Not available for graduate credit.

4014 World History for the Secondary School Classroom (3)

Prerequisites: Tch Ed 3310 or consent of the instructor. Same as Sec Ed 4014. This course is required for Social Studies certification. Adapts the themes and subject matter of World history to the secondary classroom and trains teachers in techniques particularly designed to maximize the use of primary sources, foster critical inquiry, and encourage knowledge of subject matter. Particular emphasis will be placed on defining the broad and connecting themes of World history, on expanding bibliography, and on choosing methods of inquiry for use in an interactive classroom. Cannot be counted towards the minimum 39-hour history major requirement, but can be counted towards the 45 hour maximum and for the Social Studies Certification. Not available for graduate credit.

5000 Advanced Selected Topics in History (3)

Prerequisites: Graduate standing. Special topics in history. The course may be repeated for credit with the consent of the instructor.

5001 Advanced United States History: Colonial America to 1763 (3)

Prerequisites: Graduate standing. English background of colonization; rise of distinctive New England and Southern societies; English colonial policy to the Peace of Paris.

5002 Advanced United States History: Revolution and the New Nation, 1763 to 1815 (3)

Prerequisite: Graduate standing. The American Revolution and the creation of the new nation. The young republic and the development of the first American party system.

5003 Advanced United States History: Nationalism and sectionalism, 1815 to 1860 (3)

Prerequisites: Graduate standing. The Era of Good Feelings, the Age of Jackson, manifest destiny, the political and social developments of the antebellum period relating to the growth of sectionalism and the developing antislavery crusade.

5004 Advanced United States History: 1860-1900 (3)

Prerequisites: Graduate standing. The Civil War, Reconstruction, industrial and urban expansion and their impact on American life.

5005 Advanced United States History: 1900-1940 (3)

Prerequisites: Graduate standing. The economic, political, and social developments and crises of the mature industrial United States. The growing importance of foreign relations.

5006 Advanced United States History: 1940 to the Present (3)

Prerequisites: Graduate standing. The economic, political, and social developments and crises of postindustrial United States. The role of foreign affairs in American life.

5007 Advanced Studies in United States Labor History (3)

Prerequisites: Graduate Standing. Explores advanced topics in the history of labor in the U.S. including: globalization and labor process, changing meaning and function of gender, labor/community organizing, immigration and free trade, race and labor market segmentation.

5008 Advanced Railroads in American Life (3)

Prerequisites: Graduate standing or consent of instructor. This course examines the many ways the railroads have shaped the history of the United States from the early 1830s to the present. Among the various railroad-related topics to be covered are the rise of big business, the standardization of American life, and international perspectives on transportation and travel in North America. All students will be encouraged to conduct research in the extensive railroad history collections of the St. Louis Mercantile Library.

5009 Advanced Studies of St. Louis and the West (3)

Prerequisites: Graduate Standing. An examination of the role St. Louis played in the evolution of the North American West, both in the United States and Canada, from the fur trade of the late eighteenth century to the opening of the Texas oil fields in the early twentieth century. Special emphasis will be given to competition between river and rail transportation corridors, and hence to the rivalry that developed between St. Louis and Chicago.

5010 Advanced Aviation in American Life (3)

Prerequisites: Graduate Standing. This course focuses on the history of aviation in the United States from balloon flights preceding the Wright brothers through the terrorist attacks in September 2001 with emphasis upon how aviation and aviators have influenced American society and culture. Themes include the evolution of aviation technology, the growth of the commercial/military aviation/aerospace industries, issues of race and gender in aviation, the development of America's commercial airlines, aviation's influence upon American art and literature, the significance of the space race, and the role of aerial weapons of war.

5011 Advanced Studies in the American West (3)

Prerequisites: Graduate standing. An exploration of the history of the American West from the 1750s to present, with emphasis on the role of transportation. Urban gateways such as St. Louis and San Francisco and transportation corridors such as the Missouri River and the Santa Fe and Oregon trails will be of particular importance.

5012 Advanced Studies of the Native American in American History (3)

Prerequisites: Graduate standing. Investigates Native American encounters with non-Native American peoples between 1600 and 1900, analyzing how traditional Native American cultures changed to meet a variety of new challenges introduced to North America by Europeans and Africans. The approach will be interdisciplinary and ethno-historical with emphasis placed on case studies of important native nations at key turning points in their history.

5013 The Modernization of the United States (3)

Prerequisites: Graduate Standing. Advanced studies in the economic, political and social development and crises of the maturing industrial United States between 1877 and 1940, and the growing importance of foreign relations.

5014 Advanced History of the Fur Trade, 1600-1850 (3)

Prerequisites: Graduate Standing. This course surveys the history of fur trading in North America and provides in-depth analyses of specific St. Louis case studies in both the French colonial period and in the era of American settlement and control. The focus on S. Louis and its hinterland emphasizes traditional and recent revisionist historiography that underscores the fur trade's significant role in forging multicultural alliances, producing international competition (and conflict), altering ecosystems, stimulating agricultural and industrial economies and influencing American territorial expansion across the continent.

5021 Advanced Studies in U.S. Urban History (3)

Prerequisites: Graduate standing. The physical and spatial growth of U.S. cities from colonial times to the present with special attention to the impact of industrialization, public policy, and advances in transportation technology.

5022 Advanced Comparative Urban History (3)

Prerequisites: Graduate standing. Reviews and analyzes the development of cities from a North American perspective focusing on the 19th and 20th centuries. Attention will be given to the issue of why North American cities appear and function differently from urban areas on other continents, including Europe, Asia, and South America.

5031 Advanced History of Women in the United States (3)

Same as WGS 5031. Prerequisites: Graduate standing. Development of women's economic, political, and social roles in the United States with special emphasis on the nineteenth and twentieth centuries: women and work; women and the family; women and reform movements; women and education; feminist theorists and activists; images of women.

5032 Advanced History of Women in Comparative Cultures (3)

Same as WGS 5032. Prerequisites: Graduate standing. An introduction to the historical development of women's status in a variety of cultures and periods within the areas of Africa, Europe, the Far East, Latin America, and the Middle East.

The course analyzes women's political, economic, familial, and sexual roles and the economic, demographic, ideological, and political forces which promoted change and continuity in these roles.

5033 Sexuality and Gender Theory (3)

Same as WGS 5033. This course examines the ways in which contemporary sexuality and gender theory have challenged and changed the study of culture and history. The course introduces students to sexuality and gender theory in late twentieth and early twenty-first century context[s]. It then explores dynamic links between theory and the formal structures of political economy as well as the informal structures of everyday life.

5034 Advanced History of Sexuality (3)

Same as WGS 5034. Prerequisite: Graduate standing. This course locates sexuality at the center of history and examines its impact over time on politics, society, culture and economics. In particular, the course focuses on changing definitions of sexual deviance, the historical evolution of formal and informal regulations of sexual practices and on the manner in which sex has been deployed in broader historical struggles involving gender, race, class, migration and state building.

5041 Advanced Topics in American Constitutional History (3)

Prerequisites: Graduate standing. Origins and development of principal institutions and ideas of American constitutional system; role of Constitution and Supreme Court in growth of the nation; important Supreme Court decisions; great American jurists and their impact on the law; historical background to current constitutional issues.

5042 Advanced Studies in U.S. Social Movements in the 20th Century (3)

Prerequisites: Graduate standing. This course challenges students to analyze the historical sources, objectives, and techniques of social movements initiated by racial minorities, women, gays and lesbians, evangelical Christians, and many others.

5044 Advanced Studies in American Military History to 1900 (3)

Prerequisites: Graduate standing. A study of American military institutions from colonial times to 1900. The impact of the military upon major aspects of American life. The place of war in American history to 1900.

5045 Advanced Studies in American Foreign and Military Affairs 1900-Present (3)

Prerequisites: Graduate standing. A survey of American foreign and military affairs since 1900, with particular emphasis on the major wars during the period and the Cold War Era. Consideration of the nation's changing place in a changing world.

5050 Advanced Topics in African-American History (3)

Prerequisites: Graduate standing. Will explore a salient topic in African-American history. Such historical documents as personal narratives, letters, government documents, and autobiographies as well as monographs, articles, and other secondary sources will be used to explore topics such as slavery and slave culture in the United States; African Americans and America's wars; the African American intellectual tradition; or, African-Americans and the Great Migration.

5051 Advanced Topics in African-American History: From Slavery to Civil Rights (3)

Prerequisites: Graduate standing. This course examines the impact of region, gender, and class on black activism by focusing on topics such as remembering slavery and emancipation, institution and community building during segregation, changing strategies in politics and protest, and the emergence of the direct action civil rights movement.

5052 Advanced Studies in African-American History: From Civil Rights to Black Power (3)

Prerequisites: Graduate standing. A seminar on the activities, ideas, movement centers, and personalities that created the Civil Rights and Black Power movements in the U.S. from the 1950s through the 1970s. Some familiarity with the broad contours of U.S. history is presupposed. Special attention will be devoted to the roles of the African-American masses, college students, and women, and to the points of conflict, cooperation, and intersection between African-America and the larger American society.

5053 Advanced Studies in African-American Women's History (3)

Same as WGS 5053. Prerequisites: Graduate standing. This course introduces some of the themes of African-American women's history. By examining the impact of region, gender, and class on African-American women's experiences across time, the course highlights black women's applied and theoretical contributions to feminist politics and activism as well as the black struggle for freedom and equality. Topics covered include: slavery and emancipation, institution and community building, the family and work, electoral politics and direct action protest, civil rights, and contemporary issues.

5061 Advanced Mexican American (3)

Prerequisites: Graduate Standing. This course explores Mexican American and Chicano history from the 17th century to the present. It does so by examining the making of race and ethnicity in the United States for citizens and foreigners alike. This course emphasizes change and continuity over time and focuses on themes of work, migration, race and identity.

5062 Advanced Studies in Sport and Society (3)

Prerequisites: Graduate standing. This course looks at sport in Western society as a form of social history. The first section of the course covers from early Olympic games

through the end of the eighteenth century. The major part of the course deals with the role of organized sport in Europe and in the United States since 1840, the political and economic aspects of sports, and the growth of international sports.

5071 Advanced Studies in Medieval England (3)

Prerequisites: Graduate standing. A brief summary of the Anglo-Saxon heritage and the impact of the Norman Conquest, followed by an investigation of the institutional, social, and legal evolution of the realm of England. English development will be viewed in its European context.

5072 Advanced Studies in York and Tudor England (3)

Prerequisites: Graduate standing. The turmoil over the monarchy and consolidation of the Tudor dynasty. A study of the English Reformation and the political and economic changes of the sixteenth century.

5073 Advanced Studies in Stuart England (3)

Prerequisites: Graduate standing. A study of the English revolutions, religious controversy, and the rise of parliamentary power; the social and economic changes of the century; and the role played by England in the European struggles of the period.

5081 Advanced Studies in Rome: The Republic and Empire (3)

Prerequisites: Graduate standing. A survey of the development of Roman political and cultural life from the legendary founding of the city in central Italy in 753 to the death of the Emperor Justinian in 565 A.D.

5082 Advanced History of the Church: The Middle Ages (3)

Prerequisites: Graduate standing. A topical study of the Christian church in Europe as an autonomous and central institution from the sixth century through the reformation crisis. Special attention will be given to the relations between the church and the secular world, and the contributions of medieval Christianity to the development of European institutions and ideas.

5083 Advanced Studies in Europe in Early Middle Ages (3)

Prerequisites: Graduate standing. The end of the Roman Empire as a universal entity; the successor states of the Mediterranean and Northern Europe; the emergence of a Western Christendom under the Franks; the development of feudal states; the Gregorian reforms; the Crusades; the revival of education and learning in the twelfth century.

5084 Advanced Studies in Europe in the High and Late Middle Ages (3)

Prerequisite: Graduate standing. Medieval society at its political, economic, and intellectual zenith; the crisis of the later Middle Ages; the papal schism and the development of national particular churches within Catholicism; and the rise of estate institutions.

5085 Advanced Studies in Age of the Renaissance (3)

Prerequisites: Graduate standing. The advanced study of the Italian and Northern Renaissance as a distinct age; political, socioeconomic, intellectual, religious, and artistic movements attending the decline of medieval society, and the transition to the early modern period.

5086 Advanced Studies in Age of Reformation (3)

Prerequisites: Graduate standing. Religious, intellectual, political, and socioeconomic developments of the sixteenth century.

5089 Advanced History of Ideas in the West (3)

An examination of some of the most important ideas and debates that shaped the Western world. Topics include Platonic versus Aristotelian models of the universe, Medieval synthesis and the challenge of Renaissance Naturalism, the Scientific Revolution, the political ideas of Thomas Hobbes, John Locke, and Jean-Jacques Rousseau, Romanticism, Marxism, Darwinian evolution, Freudian psychology, existentialism, structuralism and post-structuralism.

5090 Advanced Nineteenth Century Europe (3)

Prerequisites: Graduate Standing. This course is a general survey of Europe in the 'long' eighteenth century (from 1688 with the Glorious Revolution in England to the 1815 with the fall of Napoleon). Major aspects of the historical period will be covered, including political, military, social, and cultural events, upheavals, and challenges, but special emphasis will be placed on the intellectual history of the era. Philosophical, political and scientific ideas will be examined in detail to show how they shaped the modern world.

5091 Advanced Studies in European Social History Since 1715: Everyday Life (3)

Prerequisites: Graduate standing. A survey course examining the life of ordinary people in modern Europe. It begins with an examination of economic conditions and the social classes that derive from them. Most of the course explores the conditions of every day life. Topics include demography, marriage and the family, sexuality, children and old age, the roles of women, disease and death, diet, drink and drugs, clothing and housing, leisure and entertainment, and popular attitudes.

5092 Advanced Studies in Europe 1900-1950: War and Upheaval (3)

Prerequisites: Graduate standing. The impact of World Wars I and II and the search for equilibrium.

5093 Advanced Studies in Europe, 1950-Present: Peace and Prosperity (3)

Prerequisites: Graduate standing. A survey of the main social, economic, political, military, and cultural trends since the outbreak of World War II.

5094 Advanced Studies in France in the Modern Age (3)

Prerequisites: Graduate standing. The history of Republican France. Topics discussed include the creation of a liberal-democratic government; the scandals and crises of the Third Republic; the Dreyfus affair; the rise of imperialism, socialism, and feminism; the impact of World War I, the popular front, defeat, collaboration, and resistance during World War II; and the reestablishment of France as an important power.

5095 Advanced Studies in Germany in the Modern Age (3)

Prerequisites: Graduate standing. The course deals with whether or not the Third Reich should be considered the culmination of German history. Problems of national unification, economic development, representative government, and cultural modernism will be considered.

5096 Advanced Modern Britain (3)

Prerequisites: Graduate standing

An advanced study of the economic, social, and political development of modern Britain, 1750 to present.

5097 Advanced History of Spain (3)

Prerequisites: Graduate standing. An advanced survey of Spanish history from the fifteenth century to the present, emphasizing its period of imperial greatness and examining the effects of empire on national development.

5099 Advanced Eighteenth Century European History (3)

Prerequisites: Graduate standing. This course offers intensive study of Europe in the period between the Glorious Revolution in England in 1688 and the fall of Napoleon in 1815. Particular emphasis will be placed on the theme of the rise of the modern. Specifically, the course will examine the struggle by intellectuals, politicians, and military figures to move Europe forward from the old regime system. Particular emphasis will be placed on the works of Voltaire, Rousseau, Locke, and Paine.

5101 Advanced Studies in Modern Japan: 1850 to Present (3)

Prerequisites: Graduate standing. The economic, social, and political development of modern Japan.

5102 Advanced Studies in Modern China: 1800-Present (3)

Prerequisites: Graduate standing. The economic, social, and political development of modern China.

5103 Advanced Studies in Modern History of the Asian Pacific Rim (3)

Prerequisites: Graduate standing. A survey course on the 20th-century history of the most rapid growth of a broad economic region in East and Southeast Asia as well as their interactions with America. For students who need to understand the political and economic dynamics of the countries around the Pacific Basin and the historical roots of various problems.

5201 Advanced History of Latin America: To 1808 (3)
Prerequisites: Graduate standing. Latin America from the pre-Columbian civilizations to 1808, stressing social, political, and economic institutions in the Spanish colonies.

5202 Advanced History of Latin America: Since 1808 (3)
Prerequisites: Graduate standing. Emphasis on the attainment of political independence of countries in Latin America and their social, political, and economic developments in the nineteenth and twentieth centuries.

5301 Advanced Studies in West Africa to 1800 (3)
Prerequisites: Graduate standing. Discusses both the history and historiography of Africa's most populous and ethnically diverse region. Beginning with the prehistoric era prior to the desiccation of the Sahara, the course explores climatology and population movement, changes in food production and technology, state formation, the spread of Islam, cultural and political diversity in the forest region, domestic slavery, the Atlantic slave trade and its abolition.

5302 Advanced Studies in West Africa Since 1800 (3)
Prerequisites: Graduate standing. Analysis of change in the savanna/forest societies occasioned by Islamic reform and the end of the slave trade, the imposition of colonial rule and African response, growth of nationalist protest, and post independence development.

5303 Advanced Studies in African Diaspora to 1800 (3)
Prerequisites: Graduate standing. Comparative in scope, the course examines major themes in West and Central Africa and their impact on the history of Africans in the Atlantic diaspora up to 1800. Themes include: slavery, multiracialism, economics of the South Atlantic system, political dimensions and the social transformation from heterogeneous crowds to new and homogenous communities. Linkages between Africans and their descendants in the Atlantic communities of Latin America, the Caribbean, as well as North America will be stressed.

5304 Advanced Studies in African Diaspora since 1800 (3)
Prerequisites: Graduate standing. Comparative in scope, this course uses a comparative methodology to examine the major themes in West and Central Africa and their impact on the history of Africans in the Atlantic diaspora after 1800.

6013 United States History for the Secondary Classroom (3-6)
Prerequisite: Graduate standing or consent of instructor. The intent of this course is to adapt the themes and subject matter of American history to the secondary classroom and to train teachers in the methodology of Socratic symposium, techniques particularly designed to maximize the use of sources, foster critical inquiry, and encourage knowledge of subject matter. Particular emphasis will be placed on defining the broad and connecting themes of American history, on expanding bibliography and on methods for choosing primary sources for use in an interactive classroom.

History 6013 may not be used to meet History degree requirement.

6014 World History for the Secondary Classroom (3-6)
Prerequisite: Graduate standing or consent of instructor. The intent of this course is to adapt the themes and subject matter of World history to the secondary classroom and to train teachers in the methodology of Socratic symposium, techniques designed to maximize the use of sources, foster critical inquiry, and encourage knowledge of subject matter. Particular emphasis will be placed on defining the broad and connecting themes of World history, on expanding bibliography and on methods for choosing primary sources for use in an interactive classroom. Hist 6014 may not be used to meet History degree requirement.

6101 Readings in American History to 1865 (3 or 5)
Prerequisite: Graduate standing and consent of instructor. Directed readings and writing on selected topics and areas in American history to 1865.

6102 Readings in American History Since 1865 (3 or 5)
Prerequisite: Graduate standing and consent of instructor. Directed readings and writing on selected topics and areas in American history since 1865.

6103 Mercantile Library Seminar and Readings in American History (3-5)
Prerequisite: Consent of instructor and advanced graduate standing. Directed readings and writing on selected topics and areas in American history that draw heavily upon resources in the St. Louis Mercantile Library.

6104 Readings in African-American History (3 or 5)
Prerequisite: Graduate standing and consent of instructor. Directed readings and writings on selected topics and areas in African-American history.

6110 St. Louis: Metropolitan and Regional History (3 or 5)
Prerequisites: Graduate standing and consent of instructor. Directed readings and writing. Principal areas of study will include the St. Louis region before European settlement; St. Louis as an 'urban frontier'; the impact of steam powered transportation; the crisis of slavery and the Civil War; St. Louis in the Gilded Age; the 1904 World's Fair and the origins of urban planning; the impact of the automobile; the St. Louis region in the Great Depression and W.W. II; suburbanization, urban renewal and desegregation; from the Schoemehl years to St. Louis 2004.

6111 Readings in European History to 1715 (3 or 5)
Prerequisite: Graduate standing and consent of instructor. Directed readings and writing on selected topics and areas in European history to 1715.

6112 Readings in European History Since 1715 (3 or 5)
Prerequisite: Graduate standing and consent of instructor.
Directed readings and writing on selected topics and areas in European history since 1715.

6113 Readings in East Asian History (3 or 5)
Prerequisite: Graduate standing and consent of instructor.
Directed readings and writing on selected topics and areas in East Asian history.

6114 Readings in Latin American History (3 or 5)
Prerequisite: Graduate standing and consent of instructor.
Directed readings and writing on selected topics and areas in Latin American history.

6115 Readings in African History (3 or 5)
Prerequisite: Graduate standing and consent of instructor.
Directed readings and writing on selected topics and areas in African history.

6121 Directed Readings (1-3)
Prerequisite: Consent of a member of the doctoral faculty.
Directed research at the graduate level.

6122 Collaborative Research (3-6)
Prerequisites: Graduate standing and consent of instructor.
Faculty-student collaboration on a research project designed to lead toward publication of a jointly authored article.
Faculty member will direct the research.

6123 Thesis Seminar (2-6)
Prerequisite: Graduate standing and consent of instructor.
Thesis research and writing on a selected topic in history.

6124 Graduate Internship (3)
Prerequisites: Consent of supervising instructor and institution offering the internship. Supervised practicum in a museum, historical agency, and other institution offering an opportunity for hands-on experience in public history.

6131 Doctoral Proseminar in Metropolitan History (3)
Prerequisite: Consent of instructor and advanced graduate standing. Systematic review of the literature and methods of the field.

6132 Doctoral Proseminar in Regional History (3)
Prerequisites: Consent of instructor and advanced graduate standing. Systematic review of the literature and methods of the field.

6134 History Curatorship (5)
Prerequisite: Graduate standing and consent of instructor.
Principles and practices of curatorship in history museums. Historiography and research in material culture; theoretical foundations; methodologies for collecting and curating collections; legal and ethical issues, interpretation, role of the history curator in exhibit and program developments; and responsibilities to the community.

6135 Foundations of Museology I (3)
Prerequisite: Consent of Director of Museum Studies.
Program. Same as Art 6035 and Anthr 6135. Concepts for understanding museums in their social and cultural context; history of museums; museology and general social theory; information transfer vs. meaning-making models; museums and communities; the changing role of museums; museums as complex organizations; process models of museology.

6136 Foundations of Museology II (3)
Prerequisite: Hist 6035 and consent of Director of Museum Studies Program. Same as Art 6036 and Anthr 6136.
Audience-centered approaches to museology; visitor research and learning theory; philosophical and practical considerations in museum planning; the physical design of museums; creativity; exhibit and program development; collections and curation; the challenge of diversity; the future of museums.

6137 Effective Action in Museums (3)
Prerequisite: Consent of Director of Museum Studies
Program. Same as Art 6037 and Anthr 6137. The nature of the work done in museums; how museums are organized to accomplish this work; professional roles and practices; technology and resources used by museums, skills for creative and effective leadership in project management and administration in museums; planning, flow charting, budgeting, team dynamics, and related skills. The course will include several site visits to area museums and guest lectures by a variety of museum professionals.

6138 Museum Studies Master's Project (4)
Prerequisite: Consent of Director of Museum Studies
Program. Same as Art 6038 and Anthr 6138. Research and writing/exhibit development on a selected topic.

7001 Doctoral Proseminar in American History to 1865 (3)
Prerequisite: Consent of instructor and advanced graduate standing. Symantec review of the literature and methods of the field.

7002 Doctoral Research Seminar in American History to 1865 (3)
Prerequisite: Consent of the instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

7003 Doctoral Proseminar in American History Since 1865 (3)
Prerequisite: Consent of the instructor and advanced graduate standing. Systematic review of the literature and methods of the field.

7004 Doctoral Research Seminar in American History Since 1865 (3)
Prerequisite: Consent of the instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

7005 Doctoral Proseminar in African-American History (3)

Prerequisite: Consent of instructor and advanced graduate standing. Systematic review of the literature and methods of the field.

7006 Doctoral Research Seminar in African-American History (3)

Prerequisite: Consent of the instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

7007 Doctoral Proseminar in European History to 1715 (3)

Prerequisite: Consent of the instructor and advanced graduate standing. Systematic review of the literature and methods of the field.

7008 Doctoral Research Seminar in European History to 1715 (3)

Prerequisite: Consent of the instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

7009 Doctoral Proseminar in European History Since 1715 (3)

Prerequisite: Consent of the instructor and advanced graduate standing. Systematic review of the literature and methods of the field.

7010 Doctoral Research Seminar in European History Since 1715 (3)

Prerequisite: Consent of instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

7011 Doctoral Proseminar in East Asian History (3)

Prerequisite: Consent of instructor and advanced graduate standing. Systematic review of the literature and methods of the field.

7012 Doctoral Research Seminar in East Asian History (3)

Prerequisite: Consent of instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

7013 Doctoral Proseminar in Latin American History (3)

Prerequisite: Consent of instructor and advanced graduate standing. Systematic review of the literature and methods of the field.

7014 Doctoral Research Seminar in Latin American History (3)

Prerequisite: Consent of instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

7015 Doctoral Proseminar in African History (3)

Prerequisite: Consent of instructor and advanced graduate standing. Systematic review of the literature and methods of the field.

7016 Doctoral Research Seminar in African History (3)

Prerequisite: Consent of instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

7017 Dissertation Research (1-18)

Prerequisite: Completion of the doctoral qualifying examination. Dissertation research and writing on a selected topic in history.

7018 Doctoral Presentation Seminar (1-3)

Prerequisite: Previous enrollment in Hist 7017 and consent of department. Discussion and presentation of research in progress for the doctoral dissertation. Normally taken in the final year.

7019 Directed Readings for Doctoral Students (1-6)

Prerequisite: Consent of a member of the doctoral faculty. Directed research at the doctoral level.

7101 Doctoral Research in Metropolitan History (3)

Prerequisites: Consent of instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

7102 Doctoral Research Seminar in Regional History (3)

Prerequisites: Consent of the instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

Department of Mathematics and Computer Science

Faculty

A Prabhakar Rao, Professor*, Chairperson
Ph.D., University of California, Berkeley

Charles Chui, Curators' Professor*
Ph.D., University of Wisconsin

Richard Friedlander, Professor*, Associate Chairperson
Ph.D., University of California, Los Angeles

Qingtang, Jiang, Professor*
Ph.D., Peking University

Sanjiv K. Bhatia, Associate Professor*
Ph.D., University of Nebraska-Lincoln

Haiyan Cai, Associate Professor*
Ph.D., University of Maryland

Uday K. Chakraborty, Associate Professor*
Ph.D., Jadavpur University

Ronald Dotzel, Associate Professor*
Ph.D., Rutgers University

Wenjie He, Associate Professor*
Ph.D., University of Georgia

Cezary Janikow, Associate Professor*
Ph.D., University of North Carolina at Chapel Hill

Kyungho Oh, Associate Professor*
Ph.D., Purdue University

Shiying Zhao, Associate Professor*
Ph.D., University of South Carolina

Adrian Clinger, Assistant Professor
Ph.D., Columbia University

Hyung Woo Kang, Assistant Professor*
Ph.D. KAIST

Martin Pelikan, Assistant Professor*
Ph.D., University of Illinois at Urbana-Champaign

Galina N. Piatnikskaia, Affiliate Associate Professor
Ph.D., Moscow Physical-Technical Institute

Donald E. Gayou, Affiliate Assistant Professor
Ph.D., Iowa State University

John Antognoli, Senior Lecturer
M.A., University of Missouri-St. Louis

Monica L. Brown, Lecturer
M.S., Southern Illinois University, Edwardsville

Preetam S. Desai, Lecturer
M.S., University of Missouri-St. Louis

Qiang Sun Dotzel, Lecturer
M.A., University of Missouri-St. Louis

Dorothy Gotway, Lecturer
M.A., University of Kansas-Lawrence

Nazire Koc, Lecturer
M.S., Southern Illinois University, Carbondale

Shahla Peterman, Senior Lecturer
M.S., University of Wisconsin-Madison

Emily Ross, Senior Lecturer
M.A., Saint Louis University

Raymond Balbes, Professor Emeritus*
Ph.D., University of California, Los Angeles

William Connett, Professor Emeritus*
Ph.D., University of Chicago

Deborah Tepper Haimo, Professor Emerita*
Ph.D., Harvard University

Wayne L. McDaniel, Professor Emeritus*
Ph.D., Saint Louis University

Stephen Selesnick, Professor Emeritus*
Ph.D., University of London

Jerrold Siegel, Professor Emeritus*
Ph.D., Cornell University

Grant V. Welland, Professor Emeritus*
Ph.D., Purdue University

Frederick Wilke, Associate Professor Emeritus*
Ph.D., University of Missouri-Columbia

*members of Graduate Faculty

General Information

Degrees and Areas of Concentration

The Department of Mathematics and Computer Science offers work leading to the B.A. in mathematics, the B.S. in mathematics, the B.S. in computer science, and, in cooperation with the College of Education, the B.S.Ed. in secondary education with an emphasis in mathematics. The department also offers minors in computer science, mathematics, and statistics.

At the graduate level, the department offers a Master of Arts (M.A.) degree in mathematics, a Master of Science (M.S.) degree in computer science and a Ph.D. in applied mathematics.

The program leading to the B.A. in mathematics provides a broad grounding in different areas of mathematics, giving students the depth necessary to pursue various aims such as graduate studies or other career choices.

The B.S. in mathematics provides a substantial background in mathematics, statistics and computer science to produce graduates who can work as mathematicians. Both the B.A. and the B.S. in mathematics allow optional courses that enable the student to focus on areas of interest like pure or applied mathematics.

The B.S.Ed. in secondary education with an emphasis in mathematics introduces students to those branches of mathematics most relevant to the teaching of secondary school mathematics.

The B.S. in computer science prepares students for employment in modern computing technology and careers in computer science.

Students pursuing the M.A. degree in mathematics may choose an emphasis in either pure or applied mathematics. The pure mathematics emphasis is well suited for students preparing to teach at the high school, junior college, or four year liberal arts college level. Those who concentrate on applied courses in the M.A. program build a foundation for the application of mathematics in industry and the

continuation of their education in the Ph.D. program in applied mathematics.

The M.S. degree in computer science emphasizes practical aspects of the field.

The Ph.D. in applied mathematics prepares students for a leadership role involving research and development in both industrial and academic settings.

Students may enroll in any of these graduate programs on a part-time basis.

Career Outlook

A degree in mathematics or computer science prepares well-motivated students for interesting careers.

Our graduates find positions in industry, government, and education. The demand for individuals well trained in statistics, computer science, and applied mathematics is greater than the available supply. In addition, a number of graduates in mathematics have elected careers in business, law and other related fields where they find logical and analytical skills valuable.

Graduates in computer science and mathematics from UM-St. Louis are located throughout the country, and they also have a strong local presence. They have careers in banking, health care, engineering and manufacturing, law, finance, public service, management, and actuarial management. Many are working in areas such as systems management, information systems and data management, scientific computing, and scientific positions in the armed services. Others have careers in education, especially at secondary and higher levels.

Department Scholarships

The Department of Mathematics and Computer Science offers four scholarships for students who are majoring in mathematics or computer science.

The Mathematical Sciences Alumni Scholarship is a monetary award for outstanding undergraduates at the junior or senior level. **The Edward Z. Andalaft Memorial Scholarship** is a monetary award for outstanding undergraduate students at the sophomore level or higher. Applicants for each of these two scholarships must have a grade point average of 3.5 or higher in at least 24 hours of graded course work at the University of Missouri-St. Louis, and show superior achievement in courses in the mathematical sciences. **The Raymond and Thelma Balbes Scholarship in Mathematics** is a monetary award for students at the sophomore level or higher who are pursuing a degree in mathematics, have an overall GPA of at least 3.0 and a GPA of at least 3.2 in mathematics and who have completed three semesters of calculus. **The Joseph M. and Mary A. Vogl Scholarship in Mathematics** is a need based monetary award for mathematics majors. Application forms for these scholarships may be obtained from the Department

of Mathematics and Computer Science. The deadline for application for all of these scholarships is March 15, and the scholarships must be used for educational fees or for books at UM-St. Louis starting in the fall semester following the application.

Undergraduate Studies

General Education Requirements

All majors must satisfy the university and appropriate school or college general education requirements. All mathematics courses may be used to meet the university's general education breadth of study requirement in natural sciences and mathematics.

Satisfactory/Unsatisfactory Restrictions

Majors in mathematics and computer science may not take mathematical sciences or related area courses on a satisfactory/unsatisfactory basis. Students considering graduate study should consult with their advisers about taking work on a satisfactory/unsatisfactory basis.

Degree Requirements

All mathematical sciences courses presented to meet the degree requirements must be completed with a grade of C- or better. At least four courses numbered 3000 or above must be taken in residence. Students must have a 2.0 grade point average in the mathematical sciences courses completed.

Students enrolling in introductory mathematics courses should check the prerequisites to determine if a satisfactory score on the Mathematics Placement Test is necessary. The dates on which this test is administered are given in the *Schedule of Classes*. Placement into introductory courses assumes a mastery of two years of high school algebra.

A minimum grade of C- is required to meet the prerequisite requirement for any course except with permission of the department.

Note: Courses that are prerequisites for higher-level courses may not be taken for credit or quality points if the higher-level course has been satisfactorily completed.

Many students are qualified, as a result of having studied calculus in high school, to begin their major with Math 1900, Analytic Geometry and Calculus II, or Math 2000, Analytic Geometry and Calculus III. These students are urged to consult with the department before planning their programs. Credit for Math 1800, Analytic Geometry and Calculus I, will be granted to those students who complete Math 1900 with a grade of C- or better.

Similarly, students who are ready to begin their computer science studies with CS 2250, Programming and Data Structures, will be granted credit for CS 1250, Introduction to Computing, once they complete CS 2250 with a grade of C- or better.

Degree Requirements in Mathematics

All mathematics majors in all undergraduate programs must complete the mathematics core requirements.

Core Requirements

1) The following courses are required:

- 1250, Introduction to Computing
- 1320, Applied Statistics I
- 1800, Analytic Geometry and Calculus I
- 1900, Analytic Geometry and Calculus II
- 2000, Analytic Geometry and Calculus III
- 2020, Introduction to Differential Equations
- 2450, Elementary Linear Algebra
- 3000, Discrete Structures
- 4100, Advanced Calculus I

2) The related area requirements as described below must be satisfied.

Students seeking a double degree, either within this department or with another department, do not have to fulfill the related area requirements.

Bachelor of Arts in Mathematics.

In addition to the core requirements and the College of Arts and Sciences' foreign language requirement, three mathematics courses at the 4000 level or higher must be completed. Of these, one must be 4400, Introduction to Abstract Algebra

B.S.Ed. in Secondary Education with emphasis in mathematics.

In addition to the core requirements and the required education courses, three mathematics/statistics courses at the 4000 level or higher must be completed. Of these, one must be

- 4400, Introduction to Abstract Algebra, and one must be chosen from:
- 4660, Foundations of Geometry or
- 4670, Introduction to Non-Euclidean Geometry

Bachelor of Science in Mathematics

In addition to the core requirements, the B.S. in Mathematics degree requires:

1) Completing all of the following:

- 4160, Functions of a Complex Variable
- 4400, Introduction to Abstract Algebra
- 4450, Linear Algebra

2) Completing an additional three courses numbered above 4000 in mathematics, statistics or computer science, at least one of which must be in mathematics/statistics.

Degree Requirements in Computer Science

Candidates for the Bachelor of Science in Computer Science degree must complete the following work:

1) Computer Science

- 1250, Introduction to Computing
- 2250, Programming and Data Structures
- 2260, Object-Oriented Programming with C++
- 2700, Computer Systems: Architecture and Organization

- 2710, Computer Systems: Programming
- 2750, Advanced Programming with Unix

- 3000, Discrete Structures
- 3130, Design and Analysis of Algorithms
- 4250, Programming Languages
- 4280, Program Translation Techniques
- 4760, Operating Systems

2) Mathematics and Statistics

- 1320, Applied Statistics I
- 1800, Analytic Geometry and Calculus I
- 1900, Analytic Geometry and Calculus II
- 2000, Analytic Geometry and Calculus III
- 2450, Elementary Linear Algebra

3) Philosophy

- 4458, Ethics and the Computer

4) Five more elective courses, numbered above 3000 if in computer science, and above 2010 if in mathematics or statistics. At least three of these elective courses must be in computer science, and at least one must be in mathematics or statistics.

5) Satisfy the related area requirements as described below.

Related Area Requirements

Candidates for the B.A. in Mathematics must satisfy the requirements in one of the groups below with a grade of C- or better. Candidates for the B.S.Ed. in Mathematics, B.S. in Mathematics and B.S. in Computer Science must satisfy the requirements in two of the groups below with a grade of C- or better.

Candidates for the B.S. in Computer Science may not choose group 1. Candidates for the B.A. in Mathematics, B.S.Ed. in Mathematics, or B.S. in Mathematics may not choose group 2 or 3. If candidates for any of these three latter degrees choose group 4, then they cannot apply either of the two courses listed in that group towards the additional 4000 level mathematics courses (beyond the core requirements) that must be completed for each of these degrees.

Students seeking a double degree, either within this department or with another department, do not have to fulfill the related area requirements.

Related Area Courses

1) Computer Science:

- Two courses from the following list:
- 2250, Programming and Data Structures

2700, Computer Systems: Architecture and Organization
3130, Design and Analysis of Algorithms
4140, Theory of Computation
4410, Computer Graphics
4440, Digital Image Processing

2) Mathematics (Analysis):

Two courses from the following list:
2020, Introduction to Differential Equations
4030, Applied Mathematics I
4100, Advanced Calculus
4160, Functions of a Complex Variable
4230, Numerical Analysis I

3) Mathematics (Algebra):

Two courses from the following list:
4350, Theory of Numbers
4400, Introduction to Abstract Algebra
4450, Linear Algebra
4550, Combinatorics

4) Statistics:

4200, Mathematical Statistics I
4210, Mathematical Statistics II

5) Biology:

2102, General Ecology
2103, General Ecology Laboratory

6) Biology:

2012, Genetics
4182, Population Biology

7) Chemistry:

1111, Introductory Chemistry I
1121, Introductory to Chemistry II

8) Chemistry:

3312, Physical Chemistry I
and another 3000-level, or above, chemistry course.

9) Economics:

4100, Introduction to Econometrics,
and one of either:
4110, Applied Econometrics or
4130, Econometric and Time Series Forecasting

10) Philosophy:

3360, Formal Logic
3380, Philosophy of Science
4460, Advanced Formal Logic

11) Physics:

2111, Physics: Mechanics and Heat
2112, Physics: Electricity, Magnetism, and Optics

12) Physics:

3221, Mechanics
and another 3000 level, or above, physics course

13) Business Administration:

3320, Introduction to Operations Management
and one of the following courses:
4312, Business Forecasting
4324, Production and Operations Management-
Service Systems
4326, Quality Assurance in Business
4330, Production and Operations Management –
Logistics
4350, Operations Research

14) Engineering:

2310, Statics
2320, Dynamics

Minor Requirements

The department offers minors in computer science, mathematics, and statistics. All courses presented for any of these minors must be completed with a grade of C- or better.

Minor in Computer Science

The requirements for the minor are:
1250, Introduction to Computing
2250, Programming and Data Structures
2700, Computer Systems: Architecture and Organization

and two additional courses computer science courses numbered above 2700.

A minimum of two computer science courses numbered above 2700 must be taken in residence in the Department of Mathematics and Computer Science at UM-St. Louis.

Minor in Mathematics

The requirements for the minor are:
1800, Analytic Geometry and Calculus I
1900, Analytic Geometry and Calculus II
2000, Analytic Geometry and Calculus III

and two additional three-hour mathematics courses numbered above 2400. A minimum of two mathematics courses numbered 2000 or above must be taken in residence in the Department of Mathematics and Computer Science at UM-St. Louis.

Minor in Statistics

The requirements for the minor are:
1320, Applied Statistics I
4200, Mathematical Statistics I

and two additional courses in statistics numbered above 4200. A minimum of two statistics courses numbered above 2000 must be taken in residence in the Department of Mathematics and Computer Science at UM-St. Louis

Graduate Studies

The Department of Mathematics and Computer Science offers an M.A. degree in mathematics, a Ph.D. degree in

applied mathematics, and an M.S. degree in computer science.

Admission

Applicants must meet the general admission requirements of the Graduate School, described elsewhere in this *Bulletin*. Additional admission requirements for specific programs are listed below.

Mathematics Programs

Applicants must have at least a bachelor's degree in mathematics or in a field with significant mathematical content. Examples of such fields include computer science, economics, engineering and physics. An applicant's record should demonstrate superior achievement in undergraduate mathematics.

Individuals may apply for direct admission to either the M.A. or Ph.D. program. Candidates for the M.A. degree may choose to concentrate in either **pure** or **applied** mathematics. A student in the M.A. program may petition the department for transfer to the Ph.D. program upon successful completion of 15 credit hours and fulfillment of additional requirements as listed below.

Students intending to enter the Ph.D. program must have a working ability in modern programming technologies. A student with a deficiency in this area may be required to take courses at the undergraduate level in computer science.

Applicants for the Ph.D. program must, in addition, submit three letters of recommendation and scores from the Graduate Record Examination (GRE) general aptitude test.

Computer Science Program

Applicants to the Graduate Program in Computer Science must meet the general graduate admission requirements of the Graduate School, described in the U.M.-St. Louis *Bulletin*. Students seeking admission to the program must formally apply for admission to the Graduate School either online or by traditional means. Additional requirements are listed below.

Applicants must have at least a bachelor's degree, preferably in computer science or in a related area. Applicants with bachelor's degrees outside of computer science must demonstrate significant proficiency in computer science, either by taking the GRE subject area examinations or by explicitly showing competence in the following areas:

- C programming (CS 1250 and CS 2250).
- An object oriented programming language (C++ or Java) (CS 2260).
- A course in data structures (CS 2250).
- A course in assembly language programming, computer architecture, or computer organization (CS 2700).
- A course in design and analysis of algorithms (CS 3130).

- Programming with Unix, including shell scripts and tools (CS 2750).

Students must also have satisfactorily completed mathematics courses equivalent to the following UM-St. Louis courses:

- Two semesters of calculus (Math 1800 and 1900).
- A course in elementary linear algebra (Math 2450).
- A course in discrete mathematics (Math 3000).
- An elementary course in probability or statistics (Math 1320).

A student missing some of the above requirements may be admitted on restricted status if there is strong supportive evidence in other areas. The student will have to take the missing courses, or demonstrate proficiency to the satisfaction of the Graduate Director. Special regulations of the Graduate School that apply to students on restricted status are described elsewhere in this *Bulletin*.

Preliminary Advisement

Incoming students are assigned advisers with whom they should consult before each registration period to determine an appropriate course of study. If necessary, students may be required to complete undergraduate course work without receiving graduate credit.

Degree Requirements

Master of Arts in Mathematics

Candidates for the M.A. degree must complete 30 hours of course work. All courses numbered below 5000 must be completed with grades of at least B. The courses taken must include those listed below in group A together with additional courses discussed in B.

Students who have already completed courses equivalent to those in A) may substitute other courses numbered above 4000. All substitutions of courses for those listed in A) require the prior approval of the graduate director.

A) Mathematics core:

- 4100, Advanced Calculus
- 4160, Functions of a Complex Variable
- 4450, Linear Algebra

B) M.A. candidates must also complete 15 hours of course work numbered 5000 or above, chosen with the prior approval of the graduate director. Courses may be chosen to develop expertise in either pure or applied mathematics.

Thesis Option Part of B) may consist of an M.A. thesis written under the direction of a faculty member in the Department of Mathematics and Computer Science. A thesis is not, however, required for this degree. A student who wishes to write a thesis should enroll in 6 hours of Math 6900, M.A. Thesis. Students writing an M.A. thesis must defend their thesis in an oral exam administered by a

committee of three department members which includes the thesis director.

Doctor of Philosophy in Applied Mathematics

The program has two options:

- 1) **Mathematics Option**
- 2) **Computer Science Option**

The requirements for the Ph.D. degree include the following:

1. Course work
2. Ph.D. candidacy
3. Doctoral dissertation

The requirements are described in detail below.

1. Course Work

A minimum of 60 hours of courses numbered 4000 or above. In the **Mathematics Option**, at least 33 hours must be in courses numbered 5000 or above.

In the **Computer Science Option**, at least 45 hours must be in courses numbered 5000 or above.

At most 9 hours of a student's enrollment in Math 7990 (Dissertation Research) may be counted. Students are expected to maintain a 3.0 average on a 4.0 scale. All courses numbered below 5000 must be completed with a grade of at least B. Courses outside the Department of Mathematics and Computer Science will require approval of the graduate director.

When students who have earned a Master's degree are admitted to the doctoral program, appropriate credits of course work may be applied toward meeting the requirements for the doctoral degree, subject to Graduate School regulations and the approval of the graduate director. The same applied to those with some appropriate graduate credits but without a completed Master's degree.

2. Ph.D. Candidacy

Advancement to Ph.D. candidacy is a three-step process consisting of:

- A) Completing 18 hours of 5000 level courses other than Math 7990, Ph.D. Dissertation Research.
- B) Passing the qualifying examination.
- C) Selecting a Ph.D. committee and preparing a dissertation proposal and defense of the proposal.

Qualifying Examination

A student must fulfill the following requirements.

Basic Requirement

Pass one written examination covering fundamental topics. This examination would normally take place within the first 12 credit hours of study after admission to the Ph.D. program.

Mathematics Option:

Topics from advanced calculus, complex variables and linear algebra (Math 4100, 4160, 4450).

Computer Science Option: Topics from the theory of programming languages, operating systems, analysis of algorithms, and computer systems (CS 4250, 4760, 5150, 5700).

Additional Requirement

After fulfilling the basic requirement above, the student must meet one of the following:

a. Pass a written examination in an area of the student's interests. This area will be approved by the graduate committee and will be based on a set of two or more graduate courses taken by the student. This examination would normally take place within the first 24 credit hours of study after admission to the Ph.D. program.

b. Write a survey paper in a specialized area under the direction of a member of the graduate faculty. The student should propose to take this option when he/she has already finished at least 2 graduate level courses and has the approval of the graduate committee. The paper should be submitted within four semesters, at which time an oral examination given by a committee of at least three members of the graduate faculty must be passed.

In both parts a) and b), the graduate committee will determine if the topics are consistent with the option that the student is pursuing.

Dissertation Committee and Dissertation Proposal

After completing the comprehensive examinations, each student chooses a dissertation advisor and prepares a Dissertation Proposal. Usually students choose an advisor from contacts made through their course work. The dissertation committee will be formed, and the student will meet with this committee for an oral defense of his/her dissertation proposal. The dissertation proposal is a substantial document describing the problem to be worked on and the methods to be used, as well as demonstrating the student's proficiency in written communication.

Doctoral Dissertation

Each Ph.D. candidate must write a dissertation which is an original contribution to the field on a topic approved by the candidate's Ph.D. Committee and the department, and which meets the standards and requirements set by the Graduate School including the public defense of the dissertation. Students working on a dissertation may enroll in Math 7990, Ph.D. Dissertation Research. A maximum of 9 hours in Math 7990 can be used toward the required hours of work in courses numbered 5000 or above.

Master of Science in Computer Science

Candidates for the M.S. degree in Computer Science must complete 30 hours of course work, subject to the Graduate School regulations. Of these, at least 18 hours must be

numbered 5000 or above, with at least one course numbered 6000 or above, chosen with the prior approval of the Graduate Director. All courses numbered below 5000 must be completed with grades of at least B-. Outside computer science, up to 6 hours of related course work is allowed upon permission of the Graduate Director.

Students must satisfy all of the following core requirements:

- Operating Systems, CS 4760
- Programming Languages, CS 4250
- Computer Systems, CS 5700
- Software Engineering, CS 5500
- Advanced Data Structures and Algorithms, CS 5130

Waiving or substituting for a specific requirement can be done on the basis of prior course work or experience at the discretion of the Graduate Director, but it will not reduce the total hours required for the degree.

Additionally, students must attend at least five different seminars or colloquium presentations in the department.

Thesis Option

Students may choose to write an M.S. thesis under the direction of a faculty member in the Department of Mathematics and Computer Science. A thesis is not, however, required for this degree. A student who wishes to write a thesis should enroll in 6 hours of CS 6900, Thesis. Students writing an M.S. thesis must defend their thesis in an oral exam administered by a committee of three department members which includes the thesis director.

Financial Assistance

Any student who intends to apply for financial assistance, in the form of a teaching assistantship or a research assistantship, is required to have three letters of recommendation submitted with the application to the graduate program in Mathematics or Computer Science. The application must include scores on the GRE general aptitude test. Applicants are also encouraged to submit scores in the GRE subject area test in Mathematics or Computer Science. Applications for financial assistance should be submitted before February 15 prior to the academic year in which the student expects to begin graduate study. Notifications of awards are generally made March 15, and students awarded financial assistance are expected to return letters of acceptance by April 15.

Career Outlook

Graduates from the Department of Mathematics and Computer Science have little difficulty in finding positions in industry, government, and education. The demand for individuals well-trained in statistics, computer science, and applied mathematics is greater than the available supply. In addition, a number of graduates in mathematics have elected careers in business and other related fields where they have found their logical and analytical skills to be well-rewarded.

Course Descriptions

Courses in this section are grouped as follows: Mathematics, Computer Science, and Probability and Statistics.

Students enrolling in introductory mathematics courses should check the prerequisites to determine if a satisfactory score on the Mathematics Placement Test is necessary. The dates on which this test is administered are given in the *Schedule of Courses*.

A minimum grade of C- is required to meet the prerequisite requirement for any course except with permission of the department.

Students who have earned 24 or more semester hours of credit at any accredited post-secondary institution(s) before the start of the fall 2002 semester must meet the general education requirements stipulated in the UM-St Louis 2001-2002 Bulletin. The following courses fulfill the Natural Sciences and Mathematics breadth of study requirements as described in that Bulletin:

MATHEMATICS: 1020, 1030, 1035, 1070, 1100, 1102, 1105, *1150, 1800, 1900, 2000, 2020, 2450, *2510, 3000, **3520, 4030, 4060, 4100, 4110, 4160, 4230, 4240, 4270, 4350, 4400, 4410, 4450, 4500, 4550, 4580, 4620, 4640, 4660, 4670, 4800, 4890.

COMPUTER SCIENCE: 1010, 1050, 1220, 1250, 2010, 2210, 2250, 2260, 2700, 2710, 2750, 3000, 3130, 4010, 4020, 4040, 4050, 4140, 4250, 4280, 4300, 4410, 4440, 4500, 4520, 4540, 4560, 4610, 4620, 4730, 4740, 4760, 4770, 4780, 4880, 4890.

PROBABILITY AND STATISTICS: 1310, 1320, 2320, 4200, 4210, 4260, 4300, 4310, 4320, 4330, 4390.

*Mathematics 1150 and 2510 fulfill this requirement only for students seeking the B.S. in Education degree in Early Childhood Education, Elementary Education, Special Education, or Middle School Mathematics.

**Mathematics 3250 fulfills this requirement only for students seeking the B.S. in Education degree in Middle School Mathematics.

Mathematics

0005 Intermediate Algebra (3)

Prerequisite: A satisfactory score on the university's mathematics placement examination, obtained in the six months prior to enrollment in this course. Preparatory material for college level mathematics courses. Covers systems of linear equations and inequalities, polynomials, rational expressions, exponents, quadratic equations, graphing linear and quadratic functions. This course carries no credit towards any baccalaureate degree.

1020 Contemporary Mathematics (3) [MS]

Prerequisites: A satisfactory score on the university's mathematics placement examination, obtained in the six months prior to enrollment in this course. Presents methods

of problem solving, centering on problems and questions which arise naturally in everyday life. May include aspects of algebra and geometry, the mathematics of finance, probability and statistics, exponential growth, and other topics chosen from traditional and contemporary mathematics which do not employ the calculus. May be taken to meet the mathematical proficiency requirement, but may not be used as a prerequisite for other mathematics courses. Designed for students who do not plan to take Calculus. Credit will not be granted for Math 1020 if credit has been granted for Stat 1310, Math 1800, 1100, 1102, or 1105. Concurrent enrollment in Math 1020 and any of these courses is not permitted.

1030 College Algebra (3) [MS]

Prerequisites: A satisfactory score on the university's mathematics placement examination, obtained in the six months prior to enrollment in this course. Topics in algebra and probability, polynomial functions, the binomial theorem, logarithms, exponentials, and solutions to systems of equations.

1035 Trigonometry (2) [MS]

Prerequisite: Math 1030 or concurrent registration, or a satisfactory ACT Math score, or a satisfactory score on the university's mathematics proficiency examination. A study of the trigonometric and inverse trigonometric functions with emphasis on trigonometric identities and equations.

1070 Applied Mathematics of Interest (2)

Prerequisites: Math 1030. An introduction to the role of interest in applied mathematics. Topics include simple and compound interest, mathematics of annuities, amortization bonds, sinking funds, and mortgages.

1100 Basic Calculus (3) [MS]

Prerequisite: Math 1030, or a satisfactory ACT Math score, or a satisfactory score on the university's mathematics proficiency examination. Introduction to plane analytic geometry and basic differential and integral calculus with application to various areas. No credit for Mathematics majors. Credit not granted for both Math 1800 and 1100.

1102 Finite Mathematics (3)

Prerequisite: Math 1030, or a satisfactory ACT Math score, or a satisfactory score on the university's proficiency examination. Introductory logic and set theory, partitions and counting problems, elementary probability theory, stochastic processes, Markov chains, vectors and matrices, linear programming, and game theory.

1105 Basic Probability and Statistics (3) [MS]

Prerequisites: Math 1030, or a satisfactory ACT Math score, or a satisfactory score on the university's mathematics proficiency examination. An introduction to probability and statistics. Topics include the concept of probability and its properties, descriptive statistics, discrete and continuous random variables, expected value, distribution functions, the central limit theorem, random sampling and sampling

distributions. Credit not granted for more than one of Stat 1310, Stat 1320 and Math 1105.

1150 Structure of Mathematical Systems I (3) [MS]

Prerequisites: 45 hours of college credit and one of the following: Math 1030, a satisfactory ACT Math score, or a satisfactory score on the university's mathematics proficiency examination. A study of sets, relations, functions, whole numbers; the integers and their properties, and the rational and real number systems.

1320 Applied Statistics I (3)

Prerequisites: Math 1800 or 1100 or equivalent. See Statistics 1320 in Probability and Statistics section that follows.

1800 Analytic Geometry and Calculus I (5) [MS]

Prerequisites: Math 1030 and 1035, or a satisfactory ACT Math score along with a satisfactory score on the university's trigonometry examination, or a satisfactory score on both the university's mathematics proficiency examination and the university's trigonometry examination. This course provides an introduction to differential and integral calculus. Topics include limits, derivatives, related rates, Newton's method, the Mean-Value Theorem, Max-Min problems, the integral, the Fundamental Theorem of Integral Calculus, areas, volumes, and average values.

1900 Analytic Geometry and Calculus II (5)

Prerequisite: Math 1800. Topics include conic sections, rotations of axes, polar coordinates, exponential and logarithmic functions, inverse (trigonometric) functions, integration techniques, applications of the integral (including mass, moments, arc length, and hydrostatic pressure), parametric equations, infinite series, power and Taylor series.

2000 Analytic Geometry and Calculus III (5)

Prerequisite: Math 1900. Topics include vectors, cylindrical and spherical coordinates, vector-valued functions, arc length and curvature, functions of several variables, partial and directional derivatives, gradients, extrema, Lagrange multipliers, multiple integrals, change of variables, surface area, vector fields, Stokes' Theorem.

2020 Introduction to Differential Equations (3)

Prerequisite: Math 2000. Topics will be chosen from linear differential equations, equations with constant coefficients, Laplace transforms, power series solutions, systems of ordinary differential equations.

2320 Applied Statistics II (3)

Prerequisite: Stat 1320
Same as Stat 2320 See Stat 2320 in Probability and Statistics section that follows.

2450 Elementary Linear Algebra (3)

Prerequisites: Math 1100 or 1900. An introduction to linear algebra. Topics will include complex numbers, geometric vectors in two and three dimensions and their linear

transformations, the algebra of matrices, determinants, solutions of systems of equations, eigenvalues and eigenvectors.

2510 Structure of Mathematical Systems II (3) [MS]

Prerequisite: Math 1150. An introduction to probability and statistics. An intuitive study of elementary geometry. Introduction to the deductive theory of geometry and to coordinate geometry.

3000 Discrete Structures (3)

Prerequisite: Math 1900 or 1100, and CS 1250 or equivalent. Same as CS 3000. Treats fundamental ideas in discrete structures and serves as a foundation for subsequent course in both Mathematics and Computer Science. Provides an introduction to techniques of mathematical reasoning with examples derived from computer science. Topics include logic, set algebra, equivalence relations and partitions, functions, mathematical induction, elementary number theory, cardinality, recurrence relations, basic combinatorial methods, trees and graphs. Credit not granted for more than one of CS 2250 and Math 3000.

3520 Structure of Mathematical Systems III (3) [MS]

Prerequisite: Math 2510. Together with Math 1150 and 2510, this course teaches mathematics necessary for middle school mathematics certification. Topics from Math 1150 and 2510 are continued. Other topics include geometric constructions, similarity, coordinate geometry, normal distribution, combinatorics, and trigonometry. Credit will be granted only toward the B.S. in education degree in Early Childhood Education, Elementary Education, Middle School Education and Special Education.

4030 Applied Mathematics I (3)

Prerequisites: Math 2020 and 2450. Topics chosen from Fourier series, special functions, partial differential equations, and boundary value problems.

4060 Applied Differential Equations (3)

Prerequisite: Math 2020 and 2450. The study of ordinary differential equations and partial differential equations is continued with applications in such areas as physics engineering and biology.

4100 Real Analysis I (3)

Prerequisite: Math 2000 and 3000. Introduction to real analysis in one variable. Topics include the real number system, limits, continuity, differentiability, and sequences and series of functions.

4110 Advanced Calculus (3)

Prerequisite: Math 2000, 2450 and 3000. Multivariable analysis, inverse and implicit functions theorems, calculus on manifolds.

4160 Complex Analysis I (3)

Prerequisite: Math 2020 or both CS/Math 3000 and Math 2000. Complex numbers and their geometrical representation, point sets, analytic functions of a complex variable, complex integration, Taylor and Laurent series, residue theorem, conformal mapping.

4200 Mathematical Statistics I (3)

Prerequisites: Math 1320 and Math 2000. Introduction to the theory of probability and statistics using concepts and methods of calculus.

4210 Mathematical Statistics II (3)

Prerequisites: Math 4200. Continuation of Math 4200. Sampling distribution, estimation theory, properties of estimators, hypothesis testing, Neyman-Pearson Theorem, likelihood ratio tests, introduction of analysis of variance and linear models. Basics of some nonparametric procedures.

4230 Numerical Analysis I (3)

Prerequisites: Math 2020, 2450, and ability to program in an upper-level language. Solutions of equations, interpolation and approximation, numerical differentiation and integration, and numerical solution of initial value problems in ordinary differential equations. Selected algorithms will be programmed for solution on computers.

4240 Numerical Analysis II (3)

Prerequisite: Math 4230 or consent of instructor. Topics chosen from: the numerical solution of systems of linear equations; the eigenvalue/eigenvector problem; numerical solution of Partial Differential Equations (PDE); numerical solution of stiff Ordinary Differential Equations (ODE); boundary value problems; sparse matrix methods; approximation theory; optimization theory; digital filters; integral equations.

4270 The Calculus of Variations (3)

Prerequisites: Math 2020 and 4100. Methods for optimizing functionals and their application. The Euler-Lagrange condition. Hamilton's principle, two dimensional variational problems, and isoperimetric problems. Approximate methods for the solution of variational problems.

4350 Theory of Numbers (3)

Prerequisite: CS/Math 3000 and Math 2000 or consent of instructor. Properties of integers, multiplicative functions, congruences, primitive roots, and quadratic residues.

4400 Introduction to Abstract Algebra I (3)

Prerequisite: CS/Math 3000 and Math 2000 or consent of the department. Introduction to groups, rings, and fields, with emphasis on groups and rings.

4410 Introduction to Abstract Algebra II (3)

Continuation of Math 4400 with emphasis on fields.

4450 Linear Algebra (3)

Prerequisites: CS/Math 3000, Math 2000 and Math 2450. Topics selected from vector spaces, bases, linear transformations, matrices, canonical forms, eigenvalues, hermitian and unitary matrices, inner product spaces, and quadratic forms.

4500 Special Readings (1-10)

Prerequisites: CS/Math 3000, Math 2000 and consent of instructor.

4550 Combinatorics (3)

Prerequisite: CS/Math 3000 and Math 2000. Advanced counting methods are introduced, including the use of generating functions for the solution of recurrences and difference equations. Additional topics may include: graphs and trees, combinatorial designs, combinatorial games, error-correcting codes, and finite-state machines.

4580 Mathematical Logic (3)

Prerequisite: CS/Math 3000 and Math 2000 or Philosophy 4460. A study of the logic of mathematics by the axiomatic method, with a development of the propositional calculus and restricted predicate calculus emphasizing its application to the foundations of mathematics.

4620 Projective Geometry (3)

Prerequisites: CS/Math 3000, Math 2000 and Math 2450. Analytic approach to the study of projective spaces. Theorems of Desargues, Pascal, and Brianchon. Projective properties of conics.

4640 Introduction to Differential Geometry (3)

Prerequisite: CS/Math 3000 and Math 2000. Geometry of curves and surfaces in Euclidean three-space. Calculus on a surface. Intrinsic geometry of surfaces.

4660 Foundations of Geometry (3)

Prerequisite: CS/Math 3000 and Math 2000 or consent of department. A development of portions of Euclidean geometry from a selected set of axioms, including a discussion of consistency, independence, categoricity, and completeness of the axioms.

4670 Introduction to Non-Euclidean Geometry (3)

Prerequisite: CS/Math 3000 and Math 2000 or consent of the department. A summary of the history of the non-Euclidean geometries and a study of hyperbolic plane geometry.

4800 Introduction to Topology (3)

Prerequisite: CS/Math 3000 and Math 2000 or consent of the department. A study of topological spaces, including the concepts of limit, continuity, connectedness, compactness, etc. Special emphasis placed on, and examples taken from, the space of real numbers.

4890 Topics in Mathematics (3)

Prerequisite: Consent of instructor. A seminar on special topics in mathematics to be determined by the interests of the instructor. May be repeated for credit provided different topics are studied.

5010 Theory of Ordinary Differential Equations (3)

Prerequisite: Math 4100. A theoretical treatment of ordinary differential equations including the existence and uniqueness of solutions of differential equations and systems of differential equations. The course treats such topics as systems of linear differential equations, eigenvalue problems, autonomous systems, and boundary value problems.

5020 Classical Applied Mathematics (3)

Prerequisites: Math 4100, 4160, and 4450 or consent of instructor. The course gives the derivation of equations of mathematical physics such as Navier-Stokes' equations, Euler's equations, equations of elastic materials, and equations of electrodynamics, using scaling and conservation principles. The course also includes elements of the calculus of variations, the Euler-Lagrange equations and Hamiltonian theory.

5040 Calculus of Variations (3)

Prerequisites: Math 2020, 4100 and 4450. Classical functionals, minimization of functionals, Euler-Lagrange equations, appropriate function spaces, weak solutions, existence of solutions, approximation theory, practical applications and finite element approach to solutions will be covered.

5050 Computational Curves and Surfaces (3)

Prerequisite: Math 4100, 4230 and 4450, or consent of instructor. Construction of curves and surfaces using subdivision algorithms. Iterative refinement of discrete data in an easily programmable manner. Discussion of issues of convergence, shape control, relation to spline functions with uniform knots, multi resolution analysis, and wavelets.

5060 Computational Harmonic Analysis (3)

Prerequisites: Math 4030, Math 4100, and Math 445C. The course covers the basic of Fourier analysis and wavelet analysis. Topics include Fourier transforms and series, discrete Fourier transform, discrete cosine transform and their fast computational schemes, fast wavelet transform, and the lifting scheme. Additional topics include industrial standards for image compression and several aspects of signal processing.

5100 Real Analysis II (3)

Prerequisites: Math 4100. Introduction to measure and integration. Topics include the Riemann-Stieltjes integral, Lebesgue measure, measurable functions, the Lebesgue integral, Radon-Nikodym and Fubini theorems and the basics of L_p -spaces.

5110 Differentiable Manifolds (3)

Prerequisites: Math 4100, 4450, and 4800. An introduction to smooth manifolds and maps. Topics will include the Implicit Function Theorem, Sard's Theorem, transversality, intersection and degree theory, differential forms and integration on manifolds.

5140 Set Theory and Metric Spaces (3)

Prerequisites: Math 4100 or consent of instructor. Naïve set theory, cardinal arithmetic, ordinal numbers, the axiom of choice and equivalents, metric spaces, convergence, continuity, compactness, contraction principles and applications. Construction of completions and examples like the real numbers and p-adic numbers. Other topics could include the Stone-Weierstrass theorem and metrizable theorems.

5160 Complex Analysis II

Prerequisites: Math 4160, and either Math 4100 or 4800. A second course in complex analysis, emphasizing the theory of analytic functions, and including various topics like the Riemann mapping theorem, normal families, analytic continuation, representations of analytic functions, and elliptic functions.

5270 Numerical Linear Algebra (3)

Prerequisite: Math 4230 and Math 4450 or consent of the instructor. The course includes solution of general and special linear systems. Techniques include methods such as splitting or Krylov subspaces. Additional topics are the eigenvalue problem and the method of least squares.

5300 Partial Differential Equations (3)

Prerequisites: Math 4100, 4160, 4450, and 4800. Classification of partial differential equations; Cauchy, Dirichlet, and Neumann problems; the fundamental solution; existence theorems of potential theory; eigenvalue problems; and Tricomi's problem.

5320 Applied Statistics (3)

Prerequisites: Math 4210 or consent of instructor. The course studies classical and recently developed statistical procedures selected from areas including analysis of variance, multivariate analysis, nonparametric or semiparametric methods and generalized linear models. Emphasis is on application of procedures, including the rationale underlying choice of procedures.

5350 Operations Research-Deterministic Models (3)

Prerequisites: Math 4450 or equivalent. Same as MSIS 7350. A study of deterministic methods and models in operations research. This course provides an introduction to operations research and focuses on model building, solution and interpretation of results. Topics include formulation, solution, duality and sensitivity analysis in linear programming, integer programming, network flow models, nonlinear optimization, and dynamic programming.

5360 Operations Research-Stochastic Models (3)

Prerequisites: Math 4200 or equivalent. Same as MSIS 7352. A study of stochastic methods and models in operations research. Provides an introduction to probabilistic models for decision making under uncertainty. Topics include stochastic processes, queuing theory and models, probabilistic inventory theory and models, Markovian decision problems, simulation and reliability.

5370 Quality Management (3)

Prerequisite: MSIS 5300 or Math 4200 or consent of instructor. Same as MSIS 5326. An applied course on total quality management. Quality improvement approaches are presented and the managerial implications and responsibilities in implementing these approaches are discussed. Topical coverage includes the construction and interpretation of control charts, graphical methods, quality function deployment, robust experiments for product design and improvement, mistake-proofing (poke-yoke), the Deming approach, Baldrige award criteria, quality cost audits, worker empowerment and reward systems. Cases involving both business processes and physical processes are used to illustrate successful quality improvement efforts.

5420 Algebra (3)

Prerequisites: Math 4400 and 4450. Basic fundamentals of the theory of groups, rings and fields.

5500 Directed Readings (1-6)

Prerequisite: Consent of instructor. Independent readings at an advanced level.

5550 Topics in Advanced Mathematics for the Teacher (3)

Prerequisite: Consent of instructor. This course will look at various topics in algebra, analysis, and geometry that will deepen a teacher's understanding of the mathematics of the precollegiate curriculum. It can be taken more than once for credit.

5600 Topics in Computation (3)

Prerequisite: Consent of instructor. The course will cover various advanced topics in computation and can be taken more than once for credit. Examples of such topics are: computer graphics, computer architecture, theories of language, analysis of operating systems, numerical geometry and computer aided design, etc.

5700 Topics in Applied Mathematics (3)

Prerequisite: Consent of instructor. This course will cover various advanced topics in applied mathematics, and can be taken more than once for credit. Examples of such topics are: Fast transforms, digital filters, etc.

5710 Topics in Analysis (3)

Prerequisite: Math 5100 or consent of instructor. Topics selected from the areas of Fourier analysis, harmonic analysis, functional analysis, special functions, generalized functions, and partial differential equations. May be taken more than once for credit with consent of department.

5720 Topics in Numerical Analysis (3)

Prerequisite: Consent of instructor. The course will cover various advanced topics in numerical analysis and can be taken more than once for credit. Examples of such topics are: A.D.I. Techniques for solving p.d.e., finite element techniques, the algebraic eigenvalue problem, the software, etc.

5800 Topics in Topology (3)

Prerequisite: Consent of instructor. The course will cover topics selected from algebraic or differential topology and may be taken more than once for credit with the consent of the department.

5810 Topics in Number Theory (3)

Prerequisite: Consent of instructor. Topics selected from elementary, algebraic, analytic, and other branches of number theory. Examples of topics include the distribution of primes, the Riemann Zeta function, averages of arithmetic functions, the theory of partitions, ideal theory, and representations of integers by quadratic forms.

5820 Topics in Algebra (3)

Prerequisite: Consent of instructor. Topics selected from the theory of groups, rings, fields, algebras, and other algebraic systems. May be taken more than once for credit with consent of department.

6070 Time-Frequency Analysis (3)

Prerequisites: Math 5060. The course covers theoretical and practical aspects of several time-frequency methods. Included are linear transformations such as filtering, Zak, Gabor and wavelet transforms; bilinear transformations include the Winger-Ville distribution and other distributions of Cohen's class. Statistical methods of feature extraction and applications to signal compression are outlined as well.

6080 Advances in Wavelet Analysis (3)

Prerequisite: Math 5060. The course describes recent developments in several research areas connected with wavelet analysis. Included are frames, wavelet vectors, wavelet packets, wavelets on compact intervals and manifolds, adaptive (nonlinear) methods, and methods of computational physics. Applications include the sparsification of matrices, denoising and compression of signals.

6200 Probability Theory (3)

Prerequisite: Math 5100 may be taken concurrently. Combinatorial analysis, random walks, stochastic independence, random variables, laws of large numbers, generating functions, and branching processes.

6440 Lie Groups (3)

Prerequisites: Math 4400 and 5110. The course provides an introduction to Lie Groups, Lie Algebras, and their representations.

6600 Topics in Probability Theory (3)

Prerequisite: Consent of instructor. The course will cover advanced topics in probability theory and may be taken more than once for credit with the consent of the department

6700 Functional Analysis (3)

Prerequisites: Math 4450 and 5100. Algebraic and topological tools applied to problems in analysis. The topics chosen will usually include topological vector spaces, metric spaces, Banach spaces, Hilbert spaces, and Banach algebras.

6900 Master's Thesis (1-6)

Prerequisite: Consent of instructor. Thesis work under the supervision of a faculty member. The course is designed for those students intending to present a thesis as part of their M.A. program. Students who do not write a thesis cannot apply Math 6900 to a degree.

7990 Ph.D. Dissertation Research (1-9)

Prerequisites: Completion of comprehensive exams. May be taken for no more than nine hours.

Computer Science**1010 Introduction to Computers and the Internet (3)**

Prerequisites: Same as for Math 1020 and Math 1030. Covers basic concepts and components of a PC, including microprocessor, disk, display, multimedia, printers, scanners, backup; survey of popular applications including e-mail, personal information managers, word processors, spreadsheets; brief discussion of computer languages; networking, terminology, methods for accessing information on remote computers; dialup access to computers including use of modems; overview of the Internet, popular browsers, World Wide Web, search engines, FTP, utilities, Hyper Text Markup Language, tools for Web page construction, security, privacy. Credit not granted for both CS 1010 and BA 1800.

1015 Web Structures I (1)

Prerequisites: CS 1010 and Math 1030 or equivalent. Introduction to Web page design and management using software such as GoLive. Topics include graphical user interfaces, page templates and dynamic Web page publishing.

1016 Web Structures II (1)

Prerequisites: CS 1015(or equivalent) Introduction to Java and Java Script. This is a project oriented course using Java and software such as GoLive for Web page design and Internet programming.

1050 User Interface Design and Event-Driven Programming with Visual Basic (3)

Prerequisite: CS 1250 or knowledge of some programming language and consent of the instructor. This course explores programming in Visual Basic for event-driven applications. Design and implementation of graphical user interfaces (GUI) are explored as primary examples. Additional topics may include DDE, OLE, and interactions with databases.

1220 Computers and Programming (3)

Prerequisite: Math 1800 or 1100, or a grade of at least B in Math 1030. An overview of a computer system is presented. Structured design techniques are considered and applied to the development of computer programs. Aspects of the FORTRAN language will be studied including basic data types, subroutines and functions, arrays, and files. Credit not granted for both BA 1804 and CS 1220.

1250 Introduction to Computing (3)

Prerequisite: Math 1800 or 1100, or a grade of at least B in Math 1030. An overview of a computer system is presented. Structured design techniques are considered and applied to the development of computer programs. Aspects of a high level language such as Pascal or C will be studied, including elementary and advanced data types and subprograms. Various features of the UNIX operating system will also be discussed.

2010 An Introduction to Java and Internet Programming (3)

Prerequisite: Math 1030. Introduces the Java programming language and its use in Internet programming. This course will involve programming assignments in Java and their interface with browsers using applets. Students will also be exposed to the Java's windows toolkit -- the AWT. A brief introduction to object-oriented programming concepts will be provided. Other topics will include threads, virtual machines, byte code, and the Java security model.

2210 The C Programming Language (3)

Prerequisite: CS 2250 or the equivalent. The C language is introduced together with the associated tools which make up the UNIX C programming environment. The course is project-oriented and a portion of the practical work will involve UNIX systems programming. This course is intended for students who have completed the equivalent of CS 1250 and CS 2250 but without the C language. It may not be taken for credit if the student has taken CS 2250 with C.

2250 Programming and Data Structures (3)

Prerequisite: CS 1250. A continuation of CS 1250. Advanced programming techniques including recursion, divide-and-conquer, and backtracking will be considered. A discussion of dynamic data structures such as lists, binary trees, stacks, queues, and symbol tables will be presented. An introduction to modular programming, program specification and verification, and analysis of algorithms will be given.

2260 Object Oriented Programming with C++ (3)

Prerequisite: CS 2250. Introduces object-oriented concepts, terminology, and notation. The C++ language is explored, including topics such as dynamic memory, exception handling, function and class templates, operator overloading, inheritance, polymorphism, and generic programming with the standard template library. Additional topics may include GUI libraries.

2700 Computer Systems: Architecture and Organization (3)

Prerequisite: CS 2250. Introduces details of computer systems from architectural and organizational points of view. Topics discussed may include data representation, digital logic and basic circuits such as ALU, multiplexers, decoders, flip-flops, registers, RAM and ROM memory, memory hierarchies, I/O devices, pipelining, parallel and RISC architectures, etc.

2710 Computer Systems: Programming (3)

Prerequisite: CS 2700. Continues introduction of computer systems, with assembly programming and its application. Topics covered may include addressing modes, stack manipulations and applications for reentrant and recursive modules, memory interfacing, I/O device interfacing, and serial and parallel communication.

2750 Advanced Programming with Unix (3)

Prerequisite: CS 2250. Exploration of the Unix operating system, including its tools and utilities for program development, such as makefile, piping and redirection, shell scripts, regular expressions, and symbolic debuggers. In addition, this course explores advanced features of the C programming language, including various file processing, command-line and variable arguments, exception handling and generic interfacing.

3000 Discrete Structures (3)

Prerequisites: Math 1900 or 1100, and CS 1250 or equivalent. Same as Math 3000. Treats fundamental ideas in discrete structures and serves as a foundation for subsequent course in both Mathematics and Computer Science. Provides an introduction to techniques of mathematical reasoning with examples derived from computer science. Topics include logic, set algebra, equivalence relations and partitions, functions, mathematical induction, elementary number theory, cardinality, recurrence relations, basic combinatorial methods, trees and graphs. Credit not granted for more than one of CS 3000, Math 250, and Math 3000.

3010 Web Programming Techniques (3)

Prerequisites: CS 2750. A project-oriented course which provides a survey of current technologies including markup languages (XHTML, CSS, XML), scripting languages (Java Script), client/server computing CGI/PERL/PHP), applets, Web protocols, session tracking, and other topics as time permits.

3130 Design and Analysis of Algorithms (3)

Prerequisites: CS 2250, CS/Math 3000, Math 2450 and Math 1320. Addresses the design and mathematical analysis of fundamental algorithms in computer science. Algorithms studied may involve search, sorting, data compression, string manipulation, graph traversal and decomposition, and algebraic and numeric manipulation.

4020 Java and Internet Programming (3)

Prerequisites: CS 3010 or consent of instructor. A project-oriented course which examines core Java features and selected Internet applications, such as networking, servlets, applets, AWT/SWING graphics, database connectivity, and XML.

4040 Electronic Commerce Protocols (3)

Prerequisites: CS 2750 and Math 2450. Provides a technical introduction to electronic commerce over the Internet, examining topics such as electronic data interchange, digital currency, and electronic catalogs. The course discusses technical issues such as telecommunications infrastructure, data warehousing, software agents, and storage retrieval of multimedia information. Other topics may include cryptographic techniques as applicable to web-site development, management of data in a secure manner, authentication and confidentiality, different levels of security (transaction, network, and protocol), and digital signatures.

4050 User Interface Development (3)

Prerequisites: CS 2750. Focuses on user interface design standards as a programming problem. It covers topics such as functional vs. aesthetic concerns, elegance and simplicity, interference between competing elements, visual variables, perceptual organization for visual structure, grid-based design of module and program, semiotics with images and representation.

4140 Theory of Computation (3)

Prerequisites: CS 3130. Covers finite state machines and pushdown automata, and their relationship to regular and context-free languages. Also covers minimization of automata, Turing machines, and undecidability. Other topics may include Church's Thesis, uncomputability, computational complexity, propositional calculus and predicate calculus.

4250 Programming Languages (3)

Prerequisites: CS 2260. A study of the principles of modern programming languages. The students perform a comparative study of syntax, semantics, and pragmatics of high-level programming languages. Also provides a discussion of list-processing, object-oriented, functional, procedural, or other programming paradigms.

4280 Program Translation Techniques (3)

Prerequisites: CS 2700, CS 2260, CS/Math 3000, Math 2450. Looks at the theory of programming languages as well as the theory of program translation as a means for dealing with the conceptual gap introduced by the levels of abstraction. Program translation mechanisms are studied as a means to explore the tradeoff between language expressiveness, translation, and execution effectiveness. Particular attention is paid to compilers, with emphasis on constraints induced by syntax and semantics.

4300 Introduction to Artificial Intelligence (3)

Prerequisites: CS 2260, CS 2750 and CS 3130. An overview of AI applications is presented. An AI programming language, such as Prolog or Lisp, is introduced. Fundamental AI problem solving techniques are applied to heuristic search and game playing. An introduction to knowledge representation and expert systems is given. Topics such as theorem proving, neural networks, and natural language processing may also be studied.

4410 Computer Graphics (3)

Prerequisites: CS 2260, CS 2750 and CS 3130. The basic architecture of various types of graphics systems is presented. Also presents a detailed description of the basic algorithms for 2-dimensional and 3-dimensional graphics systems. Algorithms for shading, hidden line removal, and rendering in the 3-D systems will be examined. The course involves significant project work.

4440 Digital Image Processing (3)

Prerequisites: CS 2260, CS 2750 and CS 3130. Focuses on low-level image processing data structures and algorithms for binary image processing, region and texture analysis, image filtering, edge detection, and contour following. Other topics include coding for storage, retrieval, transmission, and image restoration.

4500 Software Engineering (3)

Prerequisites: CS 2260 and CS 2750. Introduces software engineering as a discipline, discusses stages of software lifecycle, compares development models such as waterfall, prototyping and incremental/iterative, and compares structured and object-oriented methods. It also discusses software documentation, both internal and external verification/validation, quality assurance, testing methods, maintenance, project management and team structure metrics, and available tools.

4520 Object-Oriented Analysis and Design (3)

Prerequisites: CS 4500. Concentrates on modeling using a visual language such as UML, in the context of a generic object-oriented development process. Discusses the object world, analysis/design goals as the driving development force, different system views, use cases, static and dynamic models, diagrams, modeling with patterns, and principles of responsibility assignments. The course may be supplemented with a CASE tool.

4540 Software System Architectures (3)

Concerned with the design, modeling, and evaluation of complex software systems at the architectural level of abstraction. Covers basic principles of architectural system design, and may cover topics such as multi-tiered and packaged architectures, model-view and model-service separation, design supports for distributed and client-server applications, design patterns, package interfaces, notation, persistence, and GUI frameworks.

4560 Software Development Processes (3)

Prerequisites: CS 4500 or CS 4520. This course is an in-depth study of software development processes, in the context of an actual project. Discussion includes object-oriented processes such as Rational Unified Process, as well as process management issues such as scheduling, risk-assessment, various metrics, and the selection of appropriate development methodology and tools.

4610 Database Management Systems (3)

Prerequisites: CS 2750 and CS 3130. Presents the foundations, concepts and principles of database design. Various models of data representation are considered, including the hierarchical and relational models. Also considers some of the implementation issues for database systems.

4620 Information Retrieval (3)

Prerequisites: CS 2750 and CS 3130. Presents deterministic models of information retrieval systems, including conventional Boolean, fuzzy set theory, p-norm, and vector space models. Other topics include probabilistic models, text analysis and automatic indexing, automatic query formulation, system-user adaptation and learning mechanisms, evaluation of retrieval, review of new theories and future directions, and intelligent information retrieval.

4730 Computer Networks and Communications (3)

Prerequisite: CS 2750 and Math 1320. Communication systems will be considered in the context of the ISO standard for systems interconnection. Various types of networks will be studied including wide area networks, local area networks, and fiber optic networks.

4740 Client-Server Architectures (3)

Prerequisites: CS 2750 and Math 2450. Studies communications systems in the context of the ISO standard for systems interconnection. There is hands-on exposure to development of client-server applications.

4760 Operating Systems (3)

Prerequisites: CS 2750, CS 2700, Math 1320 and Math 2450. Studies the structure of a generic operating system, considering in detail the algorithms for interprocess communication, process scheduling, resource management, memory management, file systems, and device management. Topics in security may also be examined. Examples from pertinent operating systems are presented throughout, and use of the algorithms in modern operating systems is examined. Substantial practical work, using the UNIX operating system is required.

4770 Operating Systems for Telecommunications (3)

Prerequisites: CS 4520 or MS/IS 6806. The structure of a general operating system will be studied. The various components, including the interface with the underlying hardware, will be considered in detail. UNIX and Windows/NT will be considered as case studies throughout the course. The course will also emphasize hands on

experience as a power user of at least one modern operating system.

4780 Systems Administration and Computer Security (3)

Prerequisites: CS 2750. Identifies and studies major issues of relevance to systems and networks management. Covers a wide range of topics from a basic primer on networking topics from the systems perspective to advanced technical issues of user authentication, encryption, and mail privacy. Discusses the latest advances in network management tools and computer security protocols.

4880 Individual Studies (1-3)

Prerequisites: CS 2750 and consent of instructor. Allows a student to pursue individual studies under the supervision of a faculty member. May include development of a software project. May be repeated for credit.

4890 Topics in Computer Science (3)

Prerequisite: Consent of instructor. A seminar on special topics in computer science to be determined by recent developments in the field and the interests of the instructor. May be repeated for credit with departmental consent.

5010 Advanced Java Programming (3)

Prerequisites: CS 4020 or consent of instructor. Coverage will emphasize advanced Java topics and may include, J2EE, Beans/Enterprise Beans, RMI/RPC, JDBC, Servlets/JSP, development tools such as Ant, frameworks, such as Eclipse, and Java IDEs.

5130 Advanced Data Structures and Algorithms (3)

Prerequisites: An elementary course in analysis of algorithms or consent of the instructor. This course covers analysis of time and space complexity of iterative and recursive algorithms along with performance bounds, design of data structures for efficient performance, sorting algorithms, probabilistic algorithms, divide and conquer strategies, various algorithms on graphs, and NP completeness.

5320 Introduction to Evolutionary Computation (3)

Prerequisite: CS 4300 or consent of instructor. This course introduces the concepts of nature-inspired problem solving population dynamics, Darwinian selection, and inheritance. It discusses problems applicable to evolutionary algorithms, overviews the existing models and instances, and analyzes specific instances such as genetic algorithms and genetic programming.

5340 Introduction to Machine Learning (3)

Prerequisite: CS 4300 or consent of instructor. This course introduces both symbolic and sub-symbolic approaches to machine intelligence. Specific topics covered may include data mining, supervised learning such as decision trees, and approximate methods such as fuzzy reasoning.

5360 Expert Systems (3)

Prerequisites: CS 4300 or consent of instructor. This course concentrates on issues related to building expert systems

mimicking human-level expertise, including knowledge engineering processes leading to the design, construction, and evaluation of systems, relevant languages, tools, and shells, as well as representation, quality, and inference methods.

5380 Introduction to Neural Networks (3)

Prerequisites: CS 4300 or consent of instructor. This course introduces the concepts of connectionism, along with algorithms for simulating neural networks, discussion of alternative networks architectures and training algorithms.

5400 Computer Vision (3)

Prerequisites: Graduate standing and consent of instructor. This course introduces computational models of visual perception and their implementation on computer systems. Topics include early visual processing, edge detection, segmentation, intrinsic images, image modeling, representation of visual knowledge, and image understanding.

5420 Visual Data Processing (3)

Prerequisites: Graduate standing and consent of instructor. This course introduces low-level concepts and techniques used in image processing, including methods for image capture, transformation, enhancement, restoration, and encoding.

5440 Pattern Recognition (3)

Prerequisites: Graduate standing and consent of instructor. This course provides an introduction to statistical decision theory, adaptive classifiers, and supervised and unsupervised learning. Different types of pattern recognition systems are introduced, including transducers, feature extractor, and decision units. Students are exposed to the application of the techniques to optical character recognition, speech processing, and remote sensing.

5500 Software Engineering (3)

Prerequisites: Graduate standing and consent of the instructor. This course introduces software engineering as a discipline, discusses stages of the software life cycle, compares development models such as waterfall, prototyping and incremental/iterative, covers requirements analysis, effort and cost estimation, compares structured and object-oriented analysis and design methods. It also discusses verification/validation, quality assurance, software reliability, testing methods, maintenance, documentation, project management and team structure, metrics, and available tools. Credit not granted for both CS 4500 and CS 5500.

5520 Object Oriented Analysis and Design (3)

Prerequisites: CS 4500, CS 5500, or consent of the instructor. This course concentrates on modeling using a visual language such as UML, in the context of a generic object-oriented development process. It introduces the object world, analysis/design goals as the driving development force, different system views, use cases, static and dynamic models, diagrams, modeling and patterns, and principles of

responsibility assignments. The course may be supplemented with a CASE tool. Topics are the same as CS 4520 but material is covered at a greater depth and additional projects are required. Credit not granted for both CS 4520 and CS 5520.

5540 Software Systems Architectures (3)

Prerequisites: One of the following: CS 4500, CS 5500, CS 4520, CS 5520, or consent of the instructor. This course is concerned with the design, modeling, and evaluation of complex software systems at the architectural level of abstraction. It covers basic principles of architectural system design, and may cover topics such as multi-tiered and packaged architectures, model-view and model-service separation, design support for distributed and client-server applications, design patterns, package interfaces, notation, persistence and GUI frameworks. Topics are the same as CS 4540 but material is covered at a greater depth and additional projects are required. Credit not granted for both CS 4540 and CS 5540).

5560 Software Development Processes (3)

Prerequisites: One of the following: CS 4500, CS 5500, CS 4520, CS 5520, or consent of the instructor. This course is an in-depth study of software development processes, in the context of an actual project. Discussion will include object-oriented processes such as the Rational Unified Process, as well as process management issues such as scheduling, risk-assessment, various metrics, and the selection of appropriate development methodology and tools. Topics are the same as CS 4560 but material is covered at a greater depth and additional projects are required. Credit not granted for both CS 4560 and CS 5560.

5610 Advanced Databases (3)

Prerequisites: Graduate standing and consent of instructor. This course is an in-depth study of database techniques, including normalization theory, object-oriented databases, statistical databases, distributed databases, and failure recovery. The course will also involve substantial readings from the current literature.

5620 Intelligent Information Retrieval (3)

Prerequisites: CS 4300 or consent of instructor. This course studies the use of AI techniques for the development of adaptive information retrieval systems. Techniques for analysis of information by statistical syntactical, and logical methods are also studied. Topics related to multimedia information are also discussed.

5640 Multimedia Information Systems (3)

Prerequisites: CS 4410 or CS 5400. This course studies the technical and human issues related to the design, construction, and use of computer programs that combine text, audio, video, graphics, animation, and graphical user interfaces. It also surveys applications and tools.

5700 Computer Systems (3)

Prerequisites: Background in computer organization or architecture or consent of instructor. This course focuses on parallel computing architectures, including RISC, pipelining, vector processing, SIMD, MIMD, and array processing. It introduces different memory and I/O subsystems, hardware description languages, and it demonstrates performance enhancement using different architectures studied.

5730 Client/Server Computing (3)

Prerequisite: CS 4770 or MSIS 6836. The course will study communications systems in the context of ISO standards for systems interconnection. There will be hands on exposure to development of client-server applications.

5740 Parallel and Distributed Computing (3)

Prerequisites: Background in computer organization or architecture, or consent of instructor. This course introduces the fundamentals of parallel computation and algorithm design. It discusses general techniques for designing efficient parallel algorithms for fixed-connection parallel network architectures such as arrays, trees, and hypercubes.

5760 Advanced Operating Systems and Network Management (3)

Prerequisites: CS 4760 or consent of instructor. This course provides a survey of contemporary operating systems principles, including overall design strategies for operating systems. The course also discusses communication and synchronization techniques for concurrent processes, and statistical analysis of job scheduling, process scheduling, I/O scheduling, and memory management.

5780 Systems Administration (3)

Prerequisite: CS 4760 or 4770 and MSIS 6838. The course will identify and study major issues of relevance to systems and networks management. It covers a wide range of topics from a basic primer on networking topics from the systems perspective to advanced technical issues of user authentication, encryption, and mail privacy. The course will discuss the latest advances in network management tools and computer security protocols.

5870 Computer Science Seminar (1-3)

Prerequisites: Graduate standing and consent of instructor. This is a seminar on various topics. Substantial student reading and participation is expected. It may be taken more than once for credit with the consent of the department.

5880 Computer Science Independent Project (1-3)

Prerequisites: Graduate standing and consent of instructor. This course offers the student an opportunity to work on an adviser-supervised project, individually or in a group. A student may repeat the course for up to 6 credit hours total, but at most 6 hours can be accumulated for CS 5880 and CS 6900.

5890 Topics in Computer Science (1-3)

Prerequisites: Graduate standing and consent of instructor. This course offers various topics not offered on a regular basis. It may be taken more than once for credit with the consent of the department.

6320 Advances in Evolutionary Computation (3)

Prerequisites: CS 5320 or consent of instructor. This course focuses on some advanced topics in Genetic and Evolutionary Computation, both theoretical and practical. Topics may include competent genetic algorithms, learning classifier systems, and Markov models. A substantial part of the course will be based on recent literature. Projects may involve literature research, developing specific applications or implementing a specific model.

6340 Genetic Programming (3)

Prerequisites: CS 5320 or consent of instructor. This course provides an in-depth exploration of Genetic Programming, including advanced concepts such as scalability, evolution of modularity and regularity, and constrained evolution with CGP, STGP, or CFG-based GP. It may be reading, research, or application oriented.

6410 Topics in Computer Graphics (3)

Prerequisites: CS 4410 or consent of instructor. This course covers various aspects of advanced graphics techniques, such as geometric modeling, rendering, shading, texturing, and computer animation. The course provides an in-depth study of recent advanced topics in computer graphics.

6420 Topics in Image Processing and Multimedia (3)

Prerequisites: CS 5400, CS 5420 or consent of instructor. This course covers new developments in digital image processing, computer vision, and multimedia. Topics to be covered may include image databases, object tracking, and large-scale data visualization.

6900 Thesis (1-6)

Prerequisites: Completion of at least 12 graduate credits and approval of research topic by thesis adviser. This course is designed for those students intending to present a thesis as part of their M.S. program. At most 6 hours can be accumulated for CS 5880 and CS 6900.

Probability and Statistics

1310 Elementary Statistical Methods (3)

Prerequisite: Math 1030, or a satisfactory ACT Math score, or a satisfactory score on the university's mathematics proficiency exam. An introduction to the basic ideas and tools of statistics. Introductory data analysis, statistical modeling, probability and statistical inference. Includes topics in estimation, prediction, and hypothesis testing. A major focus of the course is the analysis of data using a computer software package such as SAS. A student may not receive credit for more than one of Statistics 1310, Statistics 1320, and Math 1105.

1320 Applied Statistics I (3)

Prerequisite: Math 1800 or 1100 or equivalent.

This is the first course of a one-year sequence in introductory probability and statistics. It provides a comprehensive introduction to those models and methods which are most likely to be encountered by students in their careers in applied mathematics and the sciences. Topics include descriptive statistics, basics of probability theory, random variables and their distributions, sampling distributions, confidence intervals, and hypothesis testing for population means and population proportions. A student may not receive credit for more than one of Stat 1320, Stat 1310 and Math 1105.

2320 Applied Statistics II (3)

Prerequisite: Math 1320, or equivalent. This course is a continuation of Stat 1320. It provides a survey of a variety of important statistical methods which are useful in analyzing data. Topics include single and multi-factor analysis of variance, simple and multiple linear regression, analysis of categorical data, and non-parametric statistical methods.

4200 Mathematical Statistics I (3)

Prerequisites: Math 1320 and Math 2000. Introduction to theory of probability and statistics using concepts and methods of calculus.

4210 Mathematical Statistics II (3)

Prerequisite: Math 4200. Continuation of Statistics 4200. Sampling distributions, estimation theory, properties of estimators, hypothesis testing, Neyman-Pearson Theorem, likelihood ratio tests, introduction of analysis of variance and linear models. Basics of some nonparametric procedures.

4260 Introduction to Stochastic Processes (3)

Prerequisite: Math 4200. Basic theory and applications of stochastic processes. Markov chains, martingales, recurrent and transient states, stationary distributions, ergodic theorem, renewal processes, discrete martingales and stationary processes.

4300 Multivariate Analysis (3)

Prerequisites: Math 2450 and Math 4200, or consent of instructor. Multivariate normal distribution and related sampling distributions. Procedures of statistical inference for the multivariate normal distributions, such as hypothesis testing, parameter estimations, multivariate regression, classification and discriminant analysis and principal components analysis.

4310 Analysis of Variance and Design of Experiments (3)

Prerequisites: Math 2450 and Math 4200 or consent of instructor. An introduction to the analysis of variance with applications in completely randomized designs, randomized block designs, factorial experiments and split-plot type designs.

4320 Regression Models in Statistics (3)

Prerequisites: Math 2320 or consent of instructor. A rigorous course focused on the applications of regression. The course is rigorous in that the basic regression models in one and several variables are carefully developed using matrix notation. Topics such as the extra sums of squares principle, the general linear hypothesis, and partial and sequential F-tests are carefully presented. The course will focus on using these tools to analyze many different data sets.

4330 Nonparametric Methods in Statistics (3)

Prerequisite: Math 4200 or consent of instructor. An introduction to nonparametric statistical procedures. Order statistics, rank order statistics and scores, tests of goodness of fit, linear rank tests for the location and scale problems and applications.

4390 Topics in Probability and Statistics (3)

Prerequisite: Consent of instructor. A seminar on special topics in probability and statistics to be determined by the interests of the instructor. May be determined by the interests of the instructor. May be repeated for credit provided different topics are studied.

Department of Philosophy

Faculty

Ronald Munson, Professor, Chairperson*
Ph.D., Columbia University
Stephanie Ross, Professor*
Ph.D., Harvard University
Lawrence Davis, Associate Professor*
Ph.D., University of Michigan
Jon McGinnis, Associate Professor*
Ph.D., University of Pennsylvania
Eric Wiland, Associate Professor*
Ph.D., University of Chicago
Berit Brogaard, Assistant Professor*
Ph.D., SUNY-Buffalo
John Brunero, Assistant Professor*
Columbia University
Robert Northcott, Assistant Professor*
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Gualtiero Piccinini, Assistant Professor*
Ph.D., University of Pittsburgh
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University of Chicago
David J. Griesedieck, Senior Lecturer
M.A. Princeton University
Donald Mertz, Affiliate Associate Professor
Ph.D., Saint Louis University
Peter Fuss, Professor Emeritus
Ph.D., Harvard University
Robert M. Gordon, Research Professor
Ph.D., Columbia University
John E. Clifford, Associate Professor Emeritus
Ph.D., University of California-Los Angeles
Henry L. Shapiro, Assistant Professor Emeritus
Ph.D., Columbia University

* members of Graduate Faculty

Philosophy continues to keep alive the tradition begun by Socrates, Plato, and Aristotle of critically examining one's most cherished assumptions. Moreover, it deals with questions that are common to several areas of inquiry, such as art, ethics, the social sciences, the natural sciences, and the various professions. The study of philosophy also encourages logical precision, a heightened awareness of assumptions used in any discussion, and an attitude of both open-mindedness and responsible criticism toward new and unusual ideas. These skills are particularly useful for students planning careers in law, business, computer science, writing, or other fields requiring such disciplines of mind. For these reasons many students have found it useful to combine a

major in another field with a major in philosophy. To accommodate such students, the department has a special program for double majors.

The philosophy faculty has an unusually wide range of research interests. Faculty members have written books and articles addressing not only the classical and traditional concerns of philosophy, but also contemporary controversies in the fields of law, psychology, sociology, political theory, biology, medical ethics, theology, logic, and philosophy of history as well. For their research in some of these areas, members have been awarded a number of national research grants, including fellowships from the American Council of Learned Societies and the National Endowment for the Humanities.

In keeping with this emphasis on diversity, the department is represented by scholars trained in widely different approaches to philosophy, such as the analytic tradition, Continental idealism and existentialism, Marxist dialectic, and Asian modes of thought.

General Information

Degrees and Areas of Concentration

The department offers two options leading to the B.A. degree in philosophy. The first is for students intending to enter graduate school in philosophy; the second is for students seeking a general liberal arts education as their ultimate academic objective or preparing for professional degrees such as law. Each option offers a balance of training in the techniques of logical analysis, study of philosophical classics, and examination of selected problems in philosophy. The department also offers a minor in philosophy for students wishing to pursue a particular interest in philosophy in an organized way.

Undergraduate Studies

General Education Requirements

Majors must meet the university and college general education requirements. Philosophy 1120, Asian Philosophy and Philosophy 1125, Islamic Philosophy satisfy the college cultural diversity requirement. Majors may not count philosophy courses taken on a satisfactory/unsatisfactory basis toward the degree requirements.

Degree Requirements

Bachelor of Arts in Philosophy

Students must complete one of the following programs. At least 30, but not more than 45, hours are required for a major. A minimum of 18 hours including all courses for the major at or above the 3000 level must be taken in residence in the UM-St. Louis Department of Philosophy.

Option One: The Major in Philosophy

30 hours of course work are required:

- 1) **Philosophy 3360**, Formal Logic

2) History of Philosophy

Twelve hours in history of philosophy, at least 6 hours of which must be at the 4000 level. Choose from Phil 3301-3307 and Phil 4401-4422. Phil 1110 and 1111 together count as one 3-hour history course.

3) Normative Philosophy

One course from the following:

Philosophy 3374, Philosophy of Art

Philosophy 4430, Social and Political Philosophy

Philosophy 4435, Classical Ethical Theories

Philosophy 4438, Recent Ethical Theory

Philosophy 4474, Topics in Aesthetics

Phil 4474 cannot be used to satisfy both the normative requirement and requirement 5), the "other disciplines" requirement.

4) Core Requirement

One course from the following:

Philosophy 4440, Theories of Knowledge

Philosophy 4445, Metaphysics

5) Philosophy and Other Disciplines

Choose one course from the **Philosophy 4470 – 4490** sequence.

6) Philosophy 4491, Senior Seminar

7) Additional hours numbered above 3000 to complete 30 hours of course work. Other than the courses specified above, only courses at the 3000 level or above satisfy the course work requirement for the major. *Video courses cannot be used to satisfy course requirements for this program.*

When appropriate, Phil 4451, Special Topics in Philosophy may be used to satisfy the requirement of number 3), 4), or 5).

Students in this program should take Greek, Latin, French, or German to satisfy the foreign language requirement.

Option Two: The Double Major

30 hours of course work in philosophy are required:

1) Logic

Choose one of the following two courses:

Philosophy 3360, Formal Logic

Philosophy 1160, Logic and Language (Formal Logic is strongly recommended)

2) History of Philosophy

Six hours in history of philosophy, at least three hours of which must be at the 4000 level. Choose from the sequences Phil 3301-3307 and Phil 4401-4422. Phil 1110 and 1111 together count as one 1000-level history course.

3) 4000-level Courses

A total of nine hours or more at the 4000 level other than courses used to satisfy 2) and 4). *Video courses cannot be used to satisfy course requirements for this program.*

4) Philosophy 4491, Senior Seminar

5) Additional hours numbered above 2000 to complete thirty hours of coursework.

Departmental Honors

Majors with a 3.2 or higher grade point average in all courses may, with the department's consent, earn departmental honors by completing at least six hours, but not more than nine, of Phil 4450, Special Readings in Philosophy, submitting an acceptable thesis before the end of the senior year, and passing an oral examination.

In such cases, the thirty hours required for the major will include the credit earned in Phil 4450, Special Readings, for the senior thesis.

Related Area Requirements

Majors are urged to acquire a familiarity with some other field above the introductory level.

Transfer students planning to major in philosophy should consult the Department's undergraduate advisor as soon as possible in order to have their transcripts evaluated and plan a program of study.

The Minor

15 hours of course work in philosophy are required:

1) Philosophy 3360, Formal Logic

2) A total of twelve hours at or above the 3000 level, at least six of which must be at the 4000 level. *Video courses cannot be used to satisfy course requirements for this program.*

Minors are strongly encouraged, though not required, to take Phil 4491, Senior Seminar.

All course work for the minor except Phil 3360 must be taken in residence in the UM-St. Louis Department of Philosophy.

A GPA of 2.0 or better is required in courses presented for the minor. Prospective minors are encouraged to consult with members of the department for advice in planning an appropriate sequence of courses.

Graduate Studies**Master of Arts in Philosophy**

To earn a M.A. in philosophy, students must complete at least 36 hours of graduate-level work and pass two comprehensive exams. Entering students must demonstrate a competence in logic, either by having passed the relevant course prior to admission or by taking Phil 5561, Graduate

Formal Logic here at UM-St. Louis. Students should take Phil 5400, Proseminar in Philosophy in the first year of residency. Students may elect to write a thesis, in which case up to 6 hours may be devoted to research and writing. Two-thirds (24 credit hours) of the degree program, including the thesis for students taking that option, must be completed in residence at UM-St. Louis. In addition, the courses taken are subject to two distribution requirements:

- 1) At least half of the courses must be at the 5000 level.
- 2) At least one course (3 credit hours) must be chosen from each of the following four subject areas:

- Value Theory
- History of Philosophy
- Logic/Philosophy of Science
- Epistemology/Metaphysics

The comprehensive exams must be taken in two of these four areas.

2+3 B.A. and M.A. in Philosophy

The Combined B.A./M.A. Program in Philosophy provides an opportunity for students of recognized academic ability and educational maturity to fulfill integrated requirements of undergraduate and master's degree programs in three years from the beginning of their junior year. When all the requirements of the B.A./M.A. program have been completed, students will be awarded both the B.A. and M.A. degrees. With a carefully designed program, a student can earn both degrees within as few as ten semesters.

The Combined Program requires a minimum of 138 credit hours, of which at least 36 must be at the upper division level course numbers in the 4000-5999 range. In qualifying for the B.A., students must meet all university and college requirements, including all the requirements of the regular undergraduate major in philosophy described above. Students will normally take Philosophy 3360, Formal Logic and two courses in the 3301-3307, History of Philosophy sequence in their junior years, along with electives. Any courses still needed to satisfy college foreign language and expository writing requirements would also be taken during this year. Phil 4491, Senior Seminar and more specialized courses are taken in the senior year. In the fifth year, students take advanced electives and such required courses as are needed to fulfill remaining university, Graduate School, and departmental requirements for the M.A. This includes satisfactory completion of 36 graduate credit hours, at least 18 of which must be in courses numbered above 5000 and among which must be at least three in each of the four subject areas listed for the regular M.A. program, and one of which must be Philosophy 5400, Proseminar in Philosophy. Students are also required to earn a passing grade in comprehensive exams in each of two of these subject areas. See description below. Up to 12 graduate credit hours may be applied simultaneously to both the B.A. and M.A. requirements. Also, students may elect to write a thesis, in

which case up to six hours may be taken in Philosophy 5495, Thesis Research.

Students should apply to the Graduate Committee for admission to the Combined B.A./M.A. Program in Philosophy the semester they will complete sixty undergraduate credit hours or as soon thereafter as possible. It is also recommended that students complete the foreign language requirement and the junior-level writing requirement before applying. A cumulative grade point average of 3.0 or higher and three letters of recommendation from faculty are required for consideration.

Students will be admitted to the Combined Program under provisional status until they have completed fifteen credit hours in it with a grade point average of 3.0 or higher. After the completion of the provisional period, and with the recommendation of the Graduate Committee, students can be granted full admission into the program. Students must maintain a grade point average of 3.0 or higher throughout the Combined Program. Students who officially withdraw from the Combined Program who have successfully completed all the requirements for the B.A. degrees will be awarded the B.A. degree.

Philosophy Requirements for Students in the 2+3 Program.

To be taken in the junior year:

Choose four courses (12 credit hours) from the following:

- 1) **Philosophy 3360**, Formal Logic
- 2) Two courses in the History of Philosophy, each at the 2000 level or above.
- 3) One additional Philosophy course, at the 2000 level or above.

B. To be taken in the senior year:

Choose six courses (18 credit hours) from the following:

4491, Senior Seminar

Either

Philosophy 4445, Metaphysics or

Philosophy 4440, Theories of Knowledge

Two History courses, each at the upper division

One course from the sequence 4470-4490

Choose one of the following:

Philosophy 4430, Social and Political Philosophy

Philosophy 4435, Classical Ethical Theory

Philosophy 4438, Recent Ethical Theory

C. To be taken in the final year of the program:

Six courses (18 credit hours)

- 1) At least 5 of these courses must be at or above the 5000 level.
- 2) Courses must be selected so that the student has taken at least one from each of the four subject areas in the course of completing the 2 + 3 program:

- Value Theory
- History of Philosophy
- Logic/Philosophy of Science
- Epistemology/Metaphysics

3) Philosophy 5400, Proseminar in Philosophy

D. Graduate Exit Requirements

Each student must pass a comprehensive exam in two of the four subject areas listed in 2) of part C above.

Cooperative arrangement with Saint Louis University.

The strengths of the UM-St. Louis Philosophy Department are complemented by those of the Saint Louis University Philosophy Department, which has strengths in the history of philosophy as well as in philosophy of religion. To enhance students' opportunities for instruction and expertise, the two departments have worked out a cooperative arrangement that permits graduate philosophy students on each campus to take up to four courses at the partner institution. In any given semester, UM-St. Louis graduate students must take at least half of their courses at their home institution. Students admitted to the M.A. program on a probationary basis must take all their courses at UM-St. Louis during their first semester.

Course Descriptions

Prerequisites may be waived by consent of the department. Students who have earned 24 or more semester hours of credit at any accredited post-secondary institution(s) before the start of the fall 2002 semester must meet the general education requirements stipulated in the UM-St Louis 2001-2002 Bulletin. The following courses fulfill the Humanities breadth of study requirements as described in that Bulletin: 1090, 1091, 1110, 1111, 1120, 1125, 1130, 1150, 1160, 1185, 2250, 2255, 2252, 2253, 2254, 2255, 2256, 2258, 2274, 2275, 2280, 2281, 3301, 3302, 3303, 3304, 3305, 3307, 3360, 3369, 3372, 3374, 3379, 3380, 3383, 3385, 4401, 4402, 4405, 4406, 4407, 4408, 4409, 4410, 4420, 4421, 4422, 4430, 4435, 4438, 4439, 4440, 4445, 4450, 4451, 4452, 4453, 4457, 4458, 4460, 4465, 4469, 4470, 4474, 4476, 4478, 4479, 4482, 4483, 4484, 4485, 4487, 4490, 4491.

Phil 1120, 1125 fulfill the Cultural Diversity requirement [CD]. Courses marked [CV] or [H] fulfill the valuing and humanities requirements, respectively.

1090 Telecourse: Philosophy and Other Disciplines (3) [V,H]

Video course offering. General introduction to philosophy examines its connections to works of art and related areas. Course does not satisfy any requirements for philosophy major or minor.

1091 Telecourse: Significant Figures in Philosophy [V,H]

Video course introduces philosophy through a survey of the ideas of some of the important figures in the history of the

discipline. Course cannot be used to satisfy any requirements for philosophy major or minor.

1110 Western Philosophy I: Antiquity to the Renaissance (3) [V,H]

Lectures and discussions tracing the development of Western philosophy from its beginnings among the pre-Socratics through the Middle Ages and Renaissance. Philosophical ideas will be examined in the cultural and historical context: the Greek city-state, the rise of Christianity, etc.

1111 Western Philosophy II: Descartes to the Present (3) [V,H]

Lectures and discussions on the development of Western philosophy from Descartes (1596-1650) to the present. Philosophical ideas will be examined with an eye to their historical and cultural setting: the rise of modern science, the industrial revolution, the rise of capitalism, etc.

1120 Asian Philosophy (3) [CD,V,H]

Critical study of selected philosophical classics of India and China.

1125 Islamic Philosophy (3) [CD,V,H]

Introduction to Arabic philosophy in the Islamic classical period (roughly from mid-9th through 12th centuries). Considers philosophical and theological background and examines the thought of such notable Islamic philosophers as al-Kindi, Ibn Sina, al-Ghazali, and Ibn Rushd. Topics include proofs for the existence of God, whether the world is eternal or had a beginning, the nature of the soul and whether it is immortal, and distinction between essence and existence.

1130 Approaches to Ethics (3) [V,H]

A study and discussion of representative topics in moral philosophy such as moral skepticism, moral objectivity, theories of obligation and value, evaluation of social institutions, and the relation between morality and science. Traditional and contemporary writers will be considered.

1150 Major Questions in Philosophy (3) [V,H]

A study and discussion of representative topics in philosophy such as free will and determinism, concepts of mind and body, the basis of value judgments, knowledge and belief, and the possibility of constructing a world view.

1160 Logic and Language (3) [V,H]

An introduction to the language and logical structure of arguments, the principles of sound reasoning, and application of these principles in a variety of contexts.

1175 Arts and Ideas (3)

Same as Art & Art History 1175, English 1175, History 1175, Music 1175, Theatre & Dance 1175. An interdisciplinary course tied to the semester's offerings at the Blanche Touhill Performing Arts Center as well as other events on campus featuring the visual arts, literature, music, and film. Each semester the course will provide background on the arts in general and will critically examine particular

performances and offerings. Special themes for each semester will be selected once the Touhill schedule is in place. Students will be expected to attend 6-8 performances or exhibitions. Can be repeated once for credit.

1185 Philosophy of Religion (3) [V,H]

A philosophical investigation of such problems as the nature of religious faith and experience, the relation of faith and reason, alternative concepts of deity, and the problem of evil.

2250 Philosophy and Current Issues (3)

A careful examination of such current social controversies as women's liberation, the ethics of abortion, public accountability of holders of high offices, and the subtler forms of racism and other prejudices. Although there is no formal prerequisite, it is recommended that students have taken, or be concurrently enrolled in, at least one other philosophy course.

2252 Philosophical Foundations of Criminal Justice (3) [V,H]

Same as CCJ 2252. Addresses fundamental conceptual and ethical issues that arise in the context of the legal system. Questions may include: How does punishment differ from pre-trial detention? How, if at all, can it be justified? Is the death penalty ever justified? When is it morally permissible for juries to acquit defendants who are legally guilty? Is plea bargaining unjust? Why might people be morally obligated to obey the laws? Are Laws restricting civil liberty (e.g., laws against abortion, homosexuality, or drug use) permissible?

2253 Philosophy and Feminism (3) [V,H]

Same as WGS 2253. A critical examination of what various philosophers have said about issues of concern to women. Sample topics include oppression, racism, women's nature, femininity, marriage, motherhood, sexuality, pornography, the ethics of care.

2254 Business Ethics (3) [V,H]

A critical survey from the perspective of moral theory of businesses and business practices. Topics vary but usually include some of the following: whether the sole moral obligation of businesses is to make money; whether certain standard business practices, e.g., the creation of wants through advertising, are moral; whether businesses ought to be compelled, e.g., to protect the environment or participate in affirmative action programs.

2255 Environmental Ethics (3)

Examines such issues as the value of wilderness, our duties to animals and the natural world, pollution and development, environmental justice.

2256 Bioethics (3) [V,H]

Same as Ger 2256. An examination of ethical issues in health care practice and clinical research and in public policies affecting health care. Topics include abortion, euthanasia,

health care, experimentation, informed consent, and the right to health care.

2258 Medicine, Values, and Society (3) [V,H]

Social, conceptual, and policy issues connected with medicine form the focus of the course. Topics may include: role played by race and gender in design of research and distribution of care; whether diseases are socially constructed categories reflecting the values of society; development of social policies that offer universal access to health care; the legitimacy of using Psychotropic drugs to enhance life, rather than treat disease. The course differs from Bioethics by emphasizing policy issues and their conceptual basis. Content of this course may vary.

2274 Philosophy and Literature (3)

Critical reading and discussion of selected literary works in terms of the philosophical problems they present.

2275 Philosophy and Film (3)

Study of selected films with emphasis on philosophical problems they address. Attention will be paid to film as an artistic medium and the capacities that distinguish it from other visual, and narrative, arts.

2280 Minds, Brains, and Machines (3) [V,H]

Introduction to basic philosophical issues in cognitive science. General topics include minds as computers; computers as minds, or the possibility of artificial intelligence that is truly intelligent; relationship between mental function and brain function. Some areas of current research, such as reasoning, vision, and emotion.

2281 The Darwinian Heritage (3)

Prerequisites: Six hours of philosophy preferably including Phil 3380, Philosophy of Science, as 3 of these, graduate standing, or consent of instructor. Examines contributions to science made by Darwin's *Origin* and *Descent*, reception of Darwinism by scientists, and its continuing influence in biological, bio-behavioral, and social sciences. Also considers public reactions to Darwinism, including ways in which Darwin's views, and contemporary research in evolutionary theory and genetics, have been regarded as challenging long-held beliefs about "meaning and purpose" of human life.

3301 Ancient Philosophy (3)

Freshmen admitted by consent of department. The principal philosophical doctrines of the ancient world, with special emphasis on the philosophies of Plato and Aristotle. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course.

3302 Medieval Philosophy (3)

A critical study of the important philosophies of the period from Augustine to the Renaissance. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course.

3303 Early Modern Philosophy (3)

Principal figures in the development of rationalism, empiricism and skepticism in early modern Europe, from Descartes through Hume. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course.

3304 Kant and Nineteenth-Century Philosophy (3)

A study of Kant and such major nineteenth-century figures as Hegel and Nietzsche, Mill, and Peirce. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course.

3305 Twentieth-Century Philosophy (3)

Representative topics in contemporary philosophy, with readings selected from pragmatism, logical positivism, linguistic analysis, and existentialism. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course.

3307 American Philosophy (3)

Prerequisite: Six hours of philosophy or consent of instructor. A study of selected American philosophers.

3360 Formal Logic (3)

An introductory study of logical truth and deductive inference, with emphasis on the development and mastery of a formal system.

3369 The Marxist Heritage (3)

Same as Pol Sci 3690 and ID 3690. Study of Marx and leading Marxists. Designed to evaluate their influence on recent political, economic, and social thought and institutions.

3372 Philosophical Issues in Education (3)

A critical study and discussion of selected topics in education, including the distinctive features of education as an activity and achievement, concepts of teaching and learning, relations between education and values, and the functions of a university.

3374 Philosophy of Art (3)

Same as Art 3374. A study of issues concerning the definition of art, meaning and truth in the arts, aesthetic experience, and criticism.

3380 Philosophy of Science (3)

An examination of logical and methodological problems related to the sciences, including the structure of scientific explanations, laws and theories; methods of concept formation; and confirmation and the problem of induction.

3383 The History of Science in Philosophical Perspective (3)

Course explores philosophical underpinnings of science, including assumptions about the nature of reality and about scientific methods, the role of logic and mathematics in science, and revolutions in science. These issues will be

studied by exploring concrete examples of science, and tracing developments and changes in understandings of science. Content will vary, but the particular periods of science studied will typically include two or three of the following: ancient science, medieval science, early modern science, 19th century science, and/or 20th century science.

3385 Issues in Philosophy of Religion (3)

Prerequisite: Phil 1185 or Phil 1150 or consent of instructor. A careful examination of a selected topic in philosophy of religion or of philosophical issues arising in a selected religion. The topic or religion to be considered will be announced prior to registration. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

4401 Plato (3)

Prerequisite: Six hours of philosophy, a course in Ancient Philosophy recommended, graduate standing, or consent of instructor. A study of selected Platonic dialogues.

4402 Aristotle (3)

Prerequisite: Six hours of philosophy, a course in Ancient Philosophy, recommended, graduate standing, or consent of instructor. A selective study of Aristotle's major works.

4405 The Rationalists (3)

Prerequisite: Six hours of philosophy, a course in Ancient Philosophy recommended, graduate standing, or consent of instructor. An examination of the philosophies of such major figures as Descartes, Spinoza, and Leibniz.

4406 The British Empiricists (3)

Prerequisite: Six hours of philosophy, a course in Early Modern Philosophy recommended, graduate standing, or consent of instructor. An examination of the philosophies of such major figures as Locke, Berkeley, and Hume.

4407 Kant (3)

Prerequisite: Six hours of philosophy, Phil 3304 or equivalent recommended, graduate standing, or consent of instructor. A systematic study of the Critique of Pure Reason.

4408 Hegel (3)

Prerequisite: Six hours of philosophy, Phil 3304 or equivalent recommended, graduate standing, or consent of instructor. A critical study of the writings and influence of Hegel.

4409 Phenomenology and Existentialism (3)

Prerequisites: Six hours of philosophy, Phil 3305 or equivalent recommended, graduate standing, or consent of instructor. A study of some major representatives of these schools from Kierkegaard to the present.

4410 Significant Figures in Philosophy (3)

Prerequisite: Nine hours of philosophy, graduate standing, or consent of instructor. Examination of the work of an important twentieth-century philosopher or philosophical

movement. The philosopher or movement to be studied will be announced prior to registration. This is a variable content course that may be taken again for credit with approval of instructor and department chair.

4420 Topics in Non-Western Philosophy (3)

Prerequisites: Phil 1120, graduate standing, or consent of instructor. An extensive exploration of issues in some particular non-Western traditions (Islamic, Indian, or Chinese). This is a variable content course and may be taken again for credit with consent of instructor and department chair.

4421 The Analytic Tradition I: Origins to Logical Positivism (3)

Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. Phil 3305 and Phil 3360 strongly recommended. Course studies in depth the development of analytic philosophy through about 1950. Topics include key philosophical writings in this tradition beginning with Frege, Moore, and Russell and concluding with basic texts in logical positivism, with emphasis on Carnap, Schlick, Neurath and Hempel.

4422 The Analytic Tradition II: Post-Positivism to Present (3)

Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. Phil 3305 and Phil 3360 strongly recommended. Study of reactions and responses to basic analytic techniques and positivist doctrines beginning with Wittgenstein, Quine, and Sellars. Implications of these critiques for style and substance of analytic philosophy are studied, including such contemporary developments as reassessment of positivism, revival of naturalism, and "death" of philosophy.

4430 Social and Political Philosophy (3)

Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. An analysis of some fundamental concepts and assumptions involved in the theory and practice of social and political organization.

4435 Classical Ethical Theories

Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. Significant contributions to moral philosophy from Plato and Aristotle to Bentham and Mill.

4438 Recent Ethical Theory (3)

Prerequisite: Six hours of philosophy, graduate standing or consent of instructor. A study of major contributions to twentieth-century ethics, including works by such writers as Moore, Dewey, Ross, Stevenson, Hare, and Rawls.

4439 Topics in Ethical Theory (3)

Prerequisite: Phil 4435, 4438, nine hours of philosophy, graduate standing, or consent of instructor. Formulation and evaluation of major theories in normative ethics, metaethics, and axiology. Topics include egoism, moral realism, act and rule utilitarianism, and varieties of naturalism and non-

naturalism in ethics. This is a variable content course and can be taken again for credit with consent of instructor and department chair.

4440 Theories of Knowledge (3)

Prerequisite: Six hours of philosophy, graduate standing, or consent of instructor. An examination of concepts and problems involved in the characterization of knowledge. Specific topics will vary, but will usually include knowledge, belief, skepticism, evidence, certainty, perception, truth, and necessity.

4445 Metaphysics (3)

Prerequisite: Six hours of philosophy, graduate standing, or consent of instructor. An examination of selected metaphysical topics such as substance, universals, causality, necessity, space and time, free will, being, and identity.

4450 Special Readings in Philosophy (1-3)

Prerequisite: Special consent required. Independent study through readings, reports, and conferences. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

4451 Special Topics in Philosophy (3)

Prerequisite: Six hours of philosophy, graduate standing, or consent of instructor. A critical study of classical and/or contemporary contributions to a selected topic in philosophy. The topic to be considered will be announced prior to registration. This is a variable content course and can be taken again for credit with the consent of the instructor and department chair.

4452 Feminism and Science (3)

Same as WGS 4452. Prerequisite: Six hours of philosophy, graduate standing, or consent of instructor. This course will explore major themes and issues in feminist science scholarship, a body of research that focuses on the relationship between science and gender. Feminist research in the philosophy and history of science, and in the biological sciences, are emphasized. Issues include: the nature of objectivity, evidence, and truth; the factors that contribute to the acceptance or rejection of research hypotheses and theories; the nature and consequences of science's cognitive authority; and the relationship between science and values.

4453 Feminist Ethical Theory (3)

Prerequisite: Phil 2253, six hours of philosophy, or consent of instructor. Examines two classic 18th century statements of sympathy-based moral theory in the works of Adam Smith and David Hume. The course, then looks at a number of contemporary works that attempt to delineate a decisively feminist ethical theory, e.g., the work of Carol Gilligan, Nel Nodding, and Virginia Held. The course explores as well differences among female, feminist, and lesbian ethical standpoints.

4457 Media Ethics (3)

Same as MS 3357.

Prerequisite: nine hours of philosophy or nine hours of communication or consent of instructor. This course is concerned with some of the issues that arise from the intersection of ethics and modern media communications. Attention is given to some of the more specific concerns of media ethics, such as truth, honesty, fairness, objectivity and bias; personal privacy and the public interest; advertising; conflicts of interest; censorship and offensive or dangerous content (pornography, violence). Particular attention will be given to problems posed by the development of personal computer communications through bulletin boards, on-line services, and the Internet.

4458 Ethics and the Computer

Prerequisites: 6 hours of course work above the level of Math 1030 in Math/Computer Science or at least 6 hours of philosophy or consent of instructor. Examination of ethical issues concerning the use of computers generally and software engineering in particular. Aims at developing awareness of these issues and skills for ethical decision making regarding them through careful, analytical methods. Typical issues include privacy, intellectual property, computer fraud, and others.

4460 Advanced Formal Logic (3)

Prerequisite: Phil 3360, graduate standing, or consent of instructor. Rigorous study of major developments in contemporary logic. Emphasis is given to theoretical problems and some attention is devoted to philosophical issues arising from logic.

4465 Theory of Decisions and Games (3)

Prerequisite: Six hours of Philosophy and junior standing, Pol Sci 6401 (or the equivalent) or consent of instructor. Same as Pol Sci 4060. A study of rational decision making, including games against nature, zero-sum games and social choices. Topics will include the following: expected utility maximization, the Prisoner's Dilemma, Nash equilibria, and Arrow's theorem on the impossibility of a social welfare function. Parts of the course are technical in nature; a prior course in mathematics e.g., finite mathematics, calculus, statistics or an economics course with a mathematical component, symbolic logic, or some other course with comparable mathematical content is strongly recommended.

4469 Topics in Political Philosophy (3)

Prerequisite: Nine hours of philosophy, graduate standing, or consent of instructor. Critical examination of philosophical theories of democracy, individual autonomy, political community, social justice, and other selected issues in political philosophy.

4470 Topics in Philosophy of Language (3)

Prerequisite: Six hours of philosophy, graduate standing, or consent of instructor. Intensive examination of selected problems encountered in developing philosophical accounts of truth, reference, propositional attitudes, and related concepts. This is a variable content course and may be taken

again for credit with consent of instructor and department chair.

4474 Topics in Aesthetics (3)

Prerequisite: Phil 3374, graduate standing, or consent of instructor. Selected topics, such as vision and representation, musical aesthetics, and recent theorists. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

4476 Philosophy of History (3)

Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. Discussion and analysis of some philosophical problems raised by historical inquiry, such as subjectivity, relativism, the role of value judgments, and the nature of historical explanations.

4478 Topics in Philosophy of Mind (3)

Prerequisite: Six hours of philosophy, graduate standing, or consent of instructor. An examination of selected topics at the interface of philosophical and psychological research. This is a variable content course and can be taken again for credit with consent of instructor and department chair.

4479 Philosophy of Cognitive Science (3)

Prerequisite: Phil 4478, nine hours of philosophy, or consent of instructor. An exploration of the philosophical foundations and implications of cognitive science, a cooperative effort of philosophers, cognitive psychologists, brain scientists, computer scientists, and others to understand the relationship between the mind and the brain.

4482 Philosophy of Social Science (3)

Prerequisite: Six hours of philosophy or consent of instructor. An intensive examination of selected topics such as the nature theory, and the postmodernism debate e.g., Habermas of explanation in social science versus natural science, interpretation, Foucault, Clifford. This course may be repeated for credit on approval by the department.

4483 Topics in History and Philosophy of Science (3)

Prerequisites: Six hours of philosophy, Phil 3380, Philosophy of Science strongly recommended, graduate standing, or three hours of history, or consent of the instructor. Course begins by exploring research methods and interpretative approaches in the history of science and problems and schools of thought in the philosophy of science. It then turns to recent developments in which links have deepened between the two disciplines through shared research tools, assumptions, and projects. This is a variable content course and may be taken again for credit with consent of instructor and the department chair.

4484 Topics in History and Philosophy of Medicine (3)

Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. Focuses on the rise of philosophical issues associated with scientific medicine, including the emergence of physiology; identification of infectious and genetic diseases; development of effective drugs; rise of

diagnostic and therapeutic technologies. Topics may include: disease concepts, the classification of diseases, logic of clinical diagnosis, medical explanation, and clinical decision-making. Topics may also include development of special medical areas such as immunology, cancer treatments, or organ transplantation. This is a variable content course and may be taken again for credit with consent of instructor and the department chair.

4485 Topics in Philosophy of Religion (3)

Prerequisite: Phil 3385, nine hours of philosophy, or consent of instructor. An intensive study of problems arising out of traditional and contemporary philosophical theology. This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

4487 Topics in Philosophy of Law (3)

Same as CCJ 4487. Prerequisite: CCJ 1100 and 3 hours of philosophy, graduate standing or consent of instructor. An intensive study of recent philosophical debate about such issues as the authority of law, legal equality and justice, legal responsibility, self-determination and privacy, and legal punishment. This is a variable content course and may be taken again for credit with consent of the instructor and the department chair.

4490 Philosophical Issues in Other Disciplines (3)

Prerequisite: Nine hours in philosophy, graduate standing, or consent of instructor. An examination of selected philosophical issues in a discipline other than philosophy. One or more such disciplines as history, political science, psychology, sociology, biology, chemistry, physics, or mathematics will be chosen, and philosophical issues selected and announced prior to registration, usually in consultation with the other department concerned. This course is normally taught as a seminar and attempts to serve advanced students in other departments with or without previous background in philosophy. This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

4491 Senior Seminar (3)

Prerequisites: Senior standing; at least 12 hours of philosophy at the 1000 level or above; or consent of instructor. Intensive study of a central philosophical problem. The course emphasizes the fundamentals of philosophical writing and scholarship. Students will write a major paper to be evaluated by two members of the Philosophy Department and the course instructor.

5400 Proseminar in Philosophy (3)

Prerequisites: Graduate standing. Required of all entering graduate students in the fall semester of the first full year of residency. Topics vary. Other graduate students may take this course with the permission of the instructor and the director of graduate studies in Philosophy. Students will be expected to write papers, give presentations, and join in class discussion.

5410 Seminar in Significant Figures in Philosophy (3)

Prerequisites: Graduate Standing. In-depth study of work of a single philosopher. The philosopher selected will be announced prior to registration. This is a variable-content course any may be taken again for credit with consent of instructor and department chair.

5478 Seminar in Philosophy of Mind (3)

Prerequisites: Graduate standing. Topics may include functionalism and physicalism; representation and nature of propositional attitudes such as belief, desire, and various emotions; folk psychology and knowledge of other minds; introspection and knowledge of one's own mind; conscious and unconscious mental states and processes. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

5515 Ethics in Criminology and Criminal Justice (3)

Same as CCJ 5515. Prerequisite: CCJ 1110, 1120, 1130, 2110, 2220, Phil 2253, 2254, 2256, 4430, 4435, 4438, or consent of instructor. Examination of major ethical issues encountered in criminology and criminal justice research and practice.

5530 Seminar in Social and Political Philosophy (3)

Prerequisites: Graduate standing or consent of instructor. An intensive study of contemporary philosophical debate about such issues such as civil liberty, economic justice, political decision-making, and state authority. Variable content course and may be taken again for credit with consent of instructor and department chair.

5531 The Nature of Punishment (3)

Same as CCJ 5531. Prerequisite: Graduate standing. The historical development of punishment philosophies and techniques. Topics include the emergence of the modern prison, the joining of medical and legal treatment, and rationales for alternative forms of punishment.

5533 Philosophy of Law (3)

Same as CCJ 5533. Prerequisite: Graduate standing or consent of instructor. Examination of origins of law and the basis for legal obligation. Specific consideration of the justification of punishment, morality and law, and legal reasoning.

5538 Seminar in Ethical Theory (3)

Prerequisites: Graduate standing or consent of instructor. Answers questions from normative ethics or metaethics, which may include the following: What do all morally wrong actions have in common? What does the word "wrong" mean? How, if at all, can we verify moral judgements? Are any moral judgements valid for all societies? Do we always have good reason to be moral?

5540 Seminar in Epistemology (3)

Prerequisites: Graduate standing or consent of instructor. Close study of selected topics, texts, or individuals in epistemology. Topics may include (but are not limited to)

theories of justification, naturalism in epistemology, and conceptions of knowledge. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

5545 Seminar in Metaphysics (3)

Prerequisites: Graduate standing. Intensive study of a selected topic or problem area in metaphysics, e.g., mind-body identity, nature of the self, or conception of time. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

5551 Special Readings in Philosophy (3)

Prerequisites: Graduate standing, written consent of instructor. Independent study through readings, reports, and conferences. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

5555 Ethical and Legal Issues in Criminal Justice (3)

Same as CCJ 5555. Prerequisite: Graduate standing or consent of instructor. Examination of the moral and legal aspects of the policies and practices of criminal justice agencies and agents. Issues may include treatment of offenders, the role of technology, and research and professional ethics.

5560 Seminar in Logic (3)

Prerequisites: Graduate standing. Focused study of topics in logic and/or its history. Representative topics include Aristotelian logic, modal logic, Gödel incompleteness theorems, relevance logic, paraconsistent logic, free logic. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

5561 Graduate Formal Logic (3)

Prerequisites: Graduate standing; permission of the department. A rigorous introduction to formal logic that includes sentential calculus, predicate logic, and completeness proofs. May be taken for graduate credit only with permission of the graduate advisor and chair.

5570 Seminar in Philosophy of Language (3)

Prerequisites: Graduate standing or consent of instructor. Close study of selected topics, texts, or individuals in the philosophy of language. Topics may include (but are not limited to): theories of indexicals and demonstratives, theories of proper names and descriptions, sense and reference, compositionality, natural language semantics, syntax pragmatics, applications of core concepts in other areas of philosophy. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

5579 Seminar in Philosophy of Cognitive Science (3)

Prerequisites: Graduate standing. General topics include role of computation in cognitive science, merits of symbolic computation and connectionism, aims and methods of artificial intelligence, and relationship between cognitive

science and our everyday understanding of people. Specific topics may include perception, reasoning, consciousness, language, emotion, and will. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

5580 Seminar in Philosophy of Science (3)

Prerequisites: Graduate standing or consent of instructor. Focus on recent issues and controversies. Topics may include theories and observation, models of explanation, confirmation, realism and antirealism, empiricism and naturalism, "social construction" and feminist views of science. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

5582 Seminar in Philosophy of Social Science (3)

Prerequisites: Graduate standing or consent of instructor. Intensive examination of selected topics, e.g., nature of explanation in social science, postmodernism debate (e.g., Habermas, Foucault, Clifford), or relation of social to natural sciences. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

5590 Philosophical Issues in Other Disciplines (3)

Prerequisites: Graduate standing or consent of instructor. Examination of selected philosophical issues in disciplines other than philosophy. One or more such disciplines as history, political science, psychology, sociology, biology, chemistry, physics, or mathematics will be chosen. The discipline(s) and issues selected will be announced prior to registration. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

5595 Thesis Research (1-6)

Prerequisites: Graduate standing or consent of instructor. May be repeated to a total of six credit hours.

6421 Philosophy of Education (3)

Prerequisites: Graduate standing or consent of instructor. Same as Educational Foundations 6421. Critical examination of selected issues in education from the perspective of Western philosophy. Topics may include the distinctive features of education as an activity and achievement, concepts of teaching and learning, relations between education and values, and the role of public educational institutions.

Department of Physics and Astronomy

Faculty

Bruce A. Wilking, Professor*, Chairperson
Ph.D., University of Arizona

Jacob J. Leventhal, Curators' Professor*
Ph.D., University of Florida

Frank Edward Moss, Curators' Professor*
Ph.D., University of Virginia

Ta-Pei Cheng, Professor*
Ph.D., Rockefeller University

Bernard Joseph Feldman, Professor*
Ph.D., Harvard University

Ricardo A. Flores, Professor*
Ph.D., University of California-Santa Cruz

Thomas F. George, Professor and Chancellor
Ph.D., Yale University

Peter Herwig Handel, Professor*
Ph.D., University of Bucharest

Bob Londes Henson, Professor*
Ph.D., Washington University

Richard Dean Schwartz, Professor Emeritus*
Ph.D., University of Washington

Philip Fraundorf, Associate Professor*
Ph.D., Washington University

Vasudevan Lakshminarayanan, Associate Professor*
Ph.D., University of California-Berkeley

Wilfred H. Sorrell, Associate Professor*
Ph.D., University of Wisconsin

Sonya Bahar, Assistant Professor*
Ph.D., University of Rochester

Erika Gibb, Assistant Professor*
Ph.D., Rensselaer Polytechnic Institute

Mary Jane Kernan, Affiliate Assistant Professor
Ph.D., Washington University

Charles E. Burkhardt, Adjunct Professor
Ph.D. Washington University

Chung-In Um, Adjunct Professor
Ph.D., SUNY Buffalo

Mary M. Leopold, Adjunct Associate Professor
Ph.D., Washington University

Udo Erdmann, Adjunct Assistant Professor
Ph.D., Humboldt University

Lu Fei, Adjunct Assistant Professor
Ph.D., University of Missouri-St. Louis

Jingyue Liu, Adjunct Professor
Ph.D., Arizona State University

Lucio Mule'Stagno, Adjunct Assistant Professor
Ph.D., University of Missouri-St. Louis

Daniel J. Leopold, Research Associate Professor
Ph.D., Washington University

Aleksandr B. Neyman, Adjunct Assistant Professor
Ph.D., Dr. Sc., Saratgov State University, Russia

Vassiliy Tsytarev, Research Assistant Professor
Ph.D., St. Petersburg State University, Russia

*members of Graduate Faculty

General Information

Degrees and Areas of Concentration

The Department of Physics & Astronomy offers course work leading to the B.A. in physics, the B.S. in physics, and in cooperation with the College of Education, the B.A. in physics with teacher certification and the B.S. in education with an emphasis in physics.

The Department offers meritorious students opportunities to participate in teaching and research to help prepare them for the independent effort required in industry or graduate school. The department's faculty members have a diversity of interests and are active in various experimental and theoretical research areas.

Graduate work leading to the Master of Science in physics is also offered. The M.S. in physics program combines a sound basis in the fundamental areas of classical and modern physics from both a theoretical and an applied perspective. The program is designed to enable students with undergraduate backgrounds in physics or other technical areas to further their professional development and maintain and improve their technical development. The program is offered almost entirely in the evening to serve students who are employed locally. The department offers the Ph.D. degree in cooperation with the University of Missouri-Rolla Physics Department. Students must satisfy the UM-Rolla admission standards, and the UM-Rolla Qualifying Exam in Physics is required of UM-St. Louis Ph.D. students. However, all course work and dissertation research may be completed while the student is in residence at UM-St. Louis.

Undergraduate Studies

General Education Requirements: Majors must complete the university and college general education requirements. Any of the following courses may be used to satisfy the physical science requirement:

Astronomy: 1001, 1011, 1012, 1022, 1050, 1051, 1121

Atmospheric Science: 1001

Geology 1001, 1002, 1001A, 1002A

Physics: 1001, 1011, 1012, 2111, 2112.

Degree Requirements

All physics majors, who are first-time freshman or transfer students, must complete Physics 1099, Windows on Physics. All physics majors in all programs must complete the physics core curriculum. In addition to the core courses, each individual program has its own specific requirements. Required Physics, Mathematics, Chemistry, Biology, Optometry and Computer Science courses for a major or minor in physics may not be taken on a satisfactory/unsatisfactory grading basis.

Core Curriculum The following physics courses are required:

1099, Windows on Physics
2111, Physics: Mechanics and Heat
2112, Physics: Electricity, Magnetism, and Optics
3200, Mathematical Methods of Theoretical Physics
3221, Mechanics
3223, Electricity and Magnetism
3231, Introduction to Modern Physics I

Also required are:

Math 1800, Analytic Geometry and Calculus I
Math 1900, Analytic Geometry and Calculus II
Math 2000, Analytic Geometry and Calculus III
Math 2020, Introduction to Differential Equations
Chem 1111, Introductory Chemistry I or equivalent
Computer Science 1250, Introduction to Computer Science

Note Students are urged to begin the calculus sequence [Math 1800, Analytic Geometry and Calculus I] as soon as possible to avoid delays in graduation.

Students with experience in digital computer programming may be excused from Computer Science 1250.

Bachelor of Arts in Physics

The B.A. program is tailored to students wishing to preserve the option for specialization in graduate school without sacrificing the advantages of a liberal arts education. In addition to the core curriculum, including the foreign language requirement, at least three electives at the 3000 or 4000 must be completed. At least 31 hours of physics courses, but no more than 45 hours, are required.

Bachelor of Science in Physics

The B.S. degree provides students with five options: general physics, astrophysics, engineering physics, medical physics or optical biophysics.

General Physics Option

This option may be elected by students desiring a greater concentration in physics and mathematics and is recommended for students wishing to enter graduate study in physics. At least 49 hours but no more than 52, are required. **In addition to the core curriculum, the following physics courses are required:**

Physics

4310, Modern Electronics
4311, Advanced Physics Laboratory I
4323, Modern Optics
4331, Introduction to Quantum Mechanics
4341, Thermal and Statistical Physics
and three electives at the 4000 level in physics or astronomy.

Astronomy

1050, Introduction to Astronomy I

or
1051, Introduction to Astronomy II

Also required are:

Math

2450, Elementary Linear Algebra
4030, Applied Mathematics I
or
4320, Numerical Analysis I

Chemistry

1121, Introductory Chemistry II, or equivalent
and one elective in math or computer science at or above the 3000 level.

Astrophysics Option

This option may be elected by students who have interests in the aerospace sciences or anticipate graduate studies in astrophysics. At least 47 hours, but not more than 51, must be taken. **In addition to the core curriculum, the following physics courses are required:**

Physics

4323, Modern Optics
4331, Introduction to Quantum Mechanics
4341, Thermal and Statistical Physics

Astronomy

1050, Introduction to Astronomy I
1051, Introduction to Astronomy II
4301, Astrophysics
4322, Observational Astronomy

And one physics electives at the 4000 level. With consent of the astronomy adviser, there may be substitution of Astronomy 1001, 1011 or 1012 for 1050 or 1051.

Also required are:

Math

2450, Elementary Linear Algebra
4030, Applied Mathematics I
or
4230, Numerical Analysis I

Engineering Physics Option

Students interested in careers in the research and development field of industry should consider this option. This program exposes the student to a basic engineering curriculum, as well as to areas of physics with industrial applications, such as electronics, modern optics, and linear analysis. At least 49 hours, but no more than 51, are required. In addition to the core curriculum, the following courses are required:

Joint Engineering

2310, Statics
2320, Dynamics

Joint Electrical Engineering

2300, Introduction to Electrical Networks

Physics

4310, Modern Electronics

4311, Advanced Physics Laboratory I

4323, Modern Optics

4331, Introduction to Quantum Mechanics

4341, Thermal and Statistical Physics

Math

1320, Applied Statistics I

Also required are **two** additional courses in computer science or numerical analysis at or above the 3000 level.

Medical Physics Option

This option is designed for students who are interested in careers in various medical fields or biophysics. This option provides a strong preparation in physics, mathematics, chemistry, and biology for students who intend to apply for admission to medical schools. At least 41 hours of physics and biology combined, but no more than 51, are required. In addition to the core curriculum, the following physics and biology courses are required:

Physics

4310, Modern Electronics

4347, Biophysics of Imaging

Biology

1811, Introductory Biology I: From Molecules to Organisms

1821, Introductory Biology II: Organisms and the Environment

and two additional physics electives at the 4000 level.

Also required are:

Chemistry

1121, Introductory Chemistry II

2612, Organic Chemistry I

2622, Organic Chemistry II

2633, Organic Chemistry Laboratory

Note: With approval of the chairperson of physics and astronomy, students with strong mathematical preparations who have already completed the Physics 1011 and Physics 1012 sequence in basic physics may substitute these courses for two required core courses Physics 2111 and Physics 2112, respectively. However, this is not the recommended route because Physics 2111 and 2112 give significantly better preparation for the required junior-level physics core courses. It would be the individual student's responsibility to make up any resulting deficiencies.

Optical Biophysics Option

This program is designed for students wanting to obtain a strong biophysics emphasis that will also prepare them for the optometry program at UM-St. Louis. This 3+4 program allows students to complete their B.S. in physics

and Doctor of Optometry degrees in seven years. Students can complete their B.S. in physics degree in their fourth year while starting coursework in the College of Optometry. A total of 52 hours in physics, biology, and optometry courses are required. In addition to the physics core curriculum, the following courses are required:

Physics

4341, Thermal and Statistical Physics

Biology

1811, Introduction to Biology I: From Molecules to Organisms

1821, Introduction to Biology II: Organisms and the Environment

2482, Microbiology

2483, Microbiology Laboratory

Optometry (fourth year only)

8020, Geometric Optics

8060, Biochemistry

8120, Ocular Optics

8130, Physiological Optics Lab

8150, Physical Optics and Photometry Lab

Also required are:

Chemistry

1121, Introductory Chemistry II

2612, Organic Chemistry I

2622, Organic Chemistry II

2633, Organic Chemistry Laboratory

Psychology

1003, General Psychology **and one elective** in psychology

Statistics,

Math 1320, Applied Statistics I or Psych 2201, Psychological Statistics

Note: Upon declaring physics as a major and selecting this option, students should seek an initial interview with the Director of Student Affairs and the Pre-Optometry Advisor in the UM-St. Louis College of Optometry to ensure that all prerequisites for the College of Optometry will be completed. A similar review is recommended at the beginning of the Winter Semester of the second year. In August following the completion of their second year of this program, students may apply formally to the UM-St. Louis College of Optometry and arrange to take the Optometry Admissions Test (OAT) in October of their third year. The applicant will be invited for a formal interview for acceptance into the College of Optometry professional program following receipt of a completed application in the Fall Semester of the candidate's third year. Following the formal interview with the College of Optometry at the beginning of the third year, students with a 3.0 or better grade point average in the science prerequisites for optometry and a score of 310 or better on

the OAT exam may be accepted into the College of Optometry.

B.S. degree in Secondary Education with an Emphasis in Physics

All candidates must enroll in a program that includes Levels I, II, and III coursework in the College of Education. In addition, students must complete the following Science Core Courses and the courses listed under Physics Endorsement:

Science Core Courses:

Philosophy

3380, Philosophy of Science

Biology

1811, Introductory Biology I: From Molecules to Organisms

1821, Introductory Biology II: Organisms and the Environment

Chemistry

1111, Introductory Chemistry I

1121, Introductory Chemistry II

Geology 1001, General Geology

Atmospheric Science 1001, Elementary Meteorology

Biology 1202, Environmental Biology or another environmental science

Physics

2111, Physics: Mechanics and Heat

2112, Physics: Electricity, Magnetism, and Optics

Physics Endorsement

Physics

3200, Mathematical Methods of Theoretical Physics

3221, Mechanics

3223, Electricity and Magnetism

3231, Introduction to Modern Physics

4310, Modern Electronics

4311, Advanced Physics Laboratory I

4802, or Sec Ed 3240, Methods of Teaching Science in Secondary Schools

4837, Teaching Intern Seminar

Minor in Physics

Students may complete a minor in physics with the flexibility of emphasis on classical physics, modern physics, or a combination of the two areas. The following physics courses are required:

2111, Physics: Mechanics and Heat

2112, Physics: Electricity, Magnetism, and Optics

3200, Mathematical Methods of Theoretical Physics and two additional emphasis courses chosen from the following physics courses:

3221, Mechanics

3223, Electricity and Magnetism

3231, Introduction to Modern Physics I

4310, Modern Electronics

A GPA of at least 2.0 is required in courses presented for a minor. It is required that a student completes a minimum of 6 hours of graded work in 2000 level or above courses on the UM-St. Louis campus.

Graduate Studies

Admission Requirements

The Department requires applicants to have adequate backgrounds in such areas as mechanics, thermodynamics, electromagnetism, optics, electronics, and modern physics. Students admitted to the program with deficiencies in these areas are required to take appropriate undergraduate courses. If necessary, a remedial program is determined in consultation with the department graduate studies director at the time of application for admission.

Graduate Degree Requirements

Master's

A student must complete 30 credit hours in graduate physics courses with at least 15 of these at the 5000 or 6000 level. The writing of a thesis is optional. A maximum of 6 (3) credit hours of Research, P6490 may be counted toward the minimum 15 hours. A comprehensive examination must be passed, which includes a defense of the thesis if the student has chosen to write one. A grade point average of 3.0 must be maintained during each academic year. The requirements must be fulfilled within six years from the time of admission. Two-thirds of required graduate credit must be taken in residence. No language requirement.

Doctorate

A minimum of 48 hours past the master's degree with satisfactory performance. Residency requirement of three years/six semesters (for those with master's degree two years/four semesters) at UM-St. Louis and/or cooperating UM-Rolla campus. Ph.D. qualifying exam, dissertation, dissertation exam administered in cooperation with UM-Rolla. Overall requirement of B grades or better. Dissertation may be written in absentia. No language requirement.

Special Equipment, Facilities, or Programs

The *William L. Clay Center for Molecular Electronics*, which opened in 1996, is a facility bringing together both physicists and chemists for research in materials science. A focus of the Center is to foster collaborations between its members and colleagues in industry. The Center houses the Scanned Tip and Electron Image Lab where research at the forefront of nanotechnology is conducted with transmission electron, scanning probe, and scanning electron microscopes in a building uniquely designed for such work. The Center is spearheading the formation of

the Missouri NanoAlliance, a nano-characterization and synthesis network that will facilitate the sharing of resources across Missouri. The *Center for Neurodynamics*, established in 1995, conducts research at the interface between physics and biology, with a focus on the roles of noise and stochastic synchronization in neural processing. The Center has an on-site high speed (CCD) imaging system for studying the spatial dynamics of neural activity in the mammalian brain. Collaborations with St. Louis University will permit high time-resolution magnetoencephalography (MEG) image analysis, making use of a high-speed Internet 2 connection, UMSL's new high-speed (3.8 GHz) 128-node Beowulf cluster, and Missouri's first MEG machine. Astronomers make use of national facilities at Kitt Peak, Cerro Tololo, and Mauna Kea Observatories. The Department maintains both machine and electronic shops. The University provides email and internet services through numerous student labs equipped with computers with Windows and Macintosh operating systems, flat-bed document scanners, and color printers. The Department maintains a network of UNIX workstations with standard software packages for word and image processing. Campus computing facilities include a UNIX system and workstations. The department maintains a workstation for image processing. The department operates a machine shop and an electronics shop. In addition, the department maintains a library containing some of the most frequently used physics journals.

Typical Program:

First Semester

Physics: 6000 level and 4000, 5000 level course

Total: 6 hours

Second Semester

Physics: 6000 level and 4000, 5000 level course

Total: 6 hours

Third Semester

Physics: 6000 level and 4000, 5000 level course

Physics 6490, Thesis Research or Seminar

Total: 9 hours

Fourth Semester

Physics: 6000 level and 4000 level course

Physics 6490 Thesis Research or Seminar

Total: 9 hours

Career Outlook

Many of our students have been successful in subsequent graduate studies in astronomy and meteorology, as well as in physics. Our alumni have pursued graduate studies and earned doctorate degrees at institutions such as Cornell University, University of Wisconsin, Washington University, and University of Chicago. The many students who elected a career in industry are now working in a variety of settings for such firms as International Business Machines, Emerson Electric, Southwestern Bell, Hewlett-Packard, Boeing, and the National Center for Atmospheric

Research. Several former students are currently teaching physics in high schools around the St. Louis area.

Course Descriptions

Prerequisites may be waived by consent of the department. Courses in this section are grouped as follows: Astronomy; Atmospheric Science; Geology; and Physics.

Students who have earned 24 or more semester hours of credit at any accredited post-secondary institution(s) before the start of the fall 2002 semester must meet the general education requirements stipulated in the UM-St Louis 2001-2002 Bulletin. The following courses fulfill the Natural Sciences and Mathematics breadth of study requirements as described in that Bulletin:

ASTRONOMY: 1001, 1011, 1012, 1022, 1050, 1051, 1121.

ATMOSPHERIC SCIENCE: 1001.

GEOLOGY: 1001, 1002, 1001A, 1002A.

PHYSICS: 1001, 1011, 1012, 2111, 2112.

Astronomy

1001 Cosmic Evolution/Introductory Astronomy (4) [MI, MS]

Planets: A brief survey of their motions and properties. Stars: Observations, including stellar spectra and colors; stellar evolution, and star clusters. Galaxies: Structure and content of the Milky Way Galaxy, its relationship to other galaxies. Cosmology: The origin and evolution of the universe. Three classroom hours and two multimedia laboratories.

1011 Planets and Life in the Universe (3) [MS]

Man's concept of the solar system from Stonehenge to Einstein; geology and meteorology of the planets of our solar system, with particular attention to results from the space program; exobiology-study of the possibilities of life on other worlds and the best method of communicating with it. Three classroom hours per week.

1012 The Violent Universe and the New Astronomy (3) [MS]

A nontechnical course focusing on recent results which larger telescopes and the space program have made available. Pulsars, x-ray stars, and black holes; radio astronomy, our galaxy, and interstellar molecules; exploding galaxies and quasars; origin of the expanding universe. Three classroom hours and one observing session per week.

1022 Practical Astronomy (2) [MS]

Prerequisite: Astron 1001 or 1011. Designed to acquaint students with observational astronomy: constellations, planets, stars, nebulae, and galaxies. Students will become familiar with operation of a telescope and its use in visual observation and photography. The basics of astronomical

nomenclature and coordinates will also be emphasized. This course is primarily for nonscientists.

1050 Introduction to Astronomy I (3) [MS]

Prerequisites: Math 1030 and 1035. A survey of the history of astronomy from the ancient times to present. Theories for the formation and evolution of the solar system and the general features of the solar system and planetary motions are discussed. The physical concept of gravity is presented. The detailed properties of the planets, comets, and asteroids are reviewed, concentrating on recent results from space missions.

1051 Introduction to Astronomy II (3) [MS]

Prerequisites: Math 1030 and 1035. A survey of astronomy beyond the solar system. Topics include stars and stellar evolution, neutron stars, and black holes. The physical concept of light and the design of telescopes is discussed in detail. The structure of the Milky Way Galaxy and the large scale structure of the universe are explored. Dark matter, quasars, and active galactic nuclei are discussed in the context of theories for the formation and evolution of the universe. Course does not need to be taken in sequence with Astronomy 1050.

1121 The Search for Extraterrestrial Life (3) [MS]

Prerequisite: Astron 1001 or 1011. Are we alone? The possibility of life in the universe in addition to our own will be explored. Our discussion of the chances for extraterrestrial life will be built around the current theories of chemical, biological, and cultural evolution, which have led to our own technological civilization on Earth. Strategies for communication with extraterrestrial intelligence will be discussed.

4301 Astrophysics (3)

Prerequisite: Phys 3231 or consent of instructor. A moderately technical introduction to astrophysics. Topics will include: physics of stellar interiors and atmospheres; interpretation of stellar spectra; stellar evolution; radio astronomy; and cosmology.

4322 Observational Astronomy (4)

Prerequisites: Astron 1050, Astron 1051, and Math 2000 or consent of instructor. Tools of the astronomer: telescopes, spectroscopy, photoelectric photometry. Students will work on a number of projects which will enable them to develop expertise in obtaining, reducing, and analyzing astronomical observations. Student night observing will be an important part of the course. This course is primarily for persons who are astronomy or physics majors or who have some equivalent astronomical background.

Atmospheric Science

1001 Elementary Meteorology (4) [MS,MI]

Prerequisite: Math 1020 or equivalent. An

elementary course covering atmospheric phenomena, weather, and climate. Topics included are temperature, pressure, and moisture distributions in the atmosphere and dynamical effects such as radiation, stability, storms, and general circulation. Four classroom hours per week with one hour being a learning enhancement session to include demonstrations and exercises on problem solving.

Geology

1001 General Geology (4) [MI,MS]

Earth materials and processes, including geological aspects of the resource/energy problem. Laboratory involves identification of common rocks and minerals.

1001A General Geology (3)

Earth materials and processes, including geological aspects of the resource/energy problem. Same as Geology 1001 without the laboratory.

1002 Historical Geology (4) [MI,MS]

Prerequisite: Geol 1001. Study of changes in geography, climate and life through geological time; origin of continents, ocean basins, and mountains in light of continental drift. Laboratory primarily involves description and identification of fossils.

1002A Geology (3)

Study of changes in geography, climate and life through geological time; origin of continents, ocean basins, and mountains in light of continental drift. Same as Geology 1002 without the laboratory.

1053 Oceanography (3)

The atmospheric and ocean circulations; the chemistry and geology of the deep sea; and their effects on the distribution of marine organisms.

Physics

1001 How Things Work (3) [MS]

Provides a practical introduction to understanding common life experiences by using physical intuition and basic ideas of physics. Powerful scientific principles are demonstrated through topics ranging from airplane wings to compact disk players, from lightning strikes to lasers.

1011 Basic Physics (4) [MI,MS]

Prerequisite: Math 1800 or 1100 may be taken concurrently. A course specifically designed for students in health and life sciences, covering the topics of classical mechanics, heat and sound. Will not fulfill the Physics 2111 requirement for physics, chemistry, and engineering majors. Three classroom hours and two hours of laboratory per week.

1012 Basic Physics (4) [MI,MS]

Prerequisite: Phys 1011. A continuation of Phys 1011. A course specifically designed for students in health and life

sciences covering the topics of electricity, magnetism, light and radiation. Will not fulfill the Physics 2112 requirement for physics, chemistry, and engineering majors. Three classroom hours and two hours of laboratory per week.

1050 Introduction to Physics (4)

Prerequisite: Math 1030. A laboratory survey course which introduces students to the fields of mechanics, heat and thermodynamics, optics, electricity and magnetism, and modern physics at the pre-calculus level. A problem-solving course, recommended for science and engineering students who have no physics background or who desire additional preparation for Phys 2111. Three classroom hours and two hours of laboratory per week.

1099 Windows on Physics (1)

A seminar designed to introduce physics majors to research areas in physics and physics-related fields in the Department of Physics & Astronomy. In addition to fundamental areas of physics, the areas of astrophysics, biophysics, materials science, and nanotechnology will be included. Career opportunities for students with physics degrees will be discussed and the physics curriculum will be reviewed. The course meets weekly and is required of all physics majors and minors who are first-time freshmen or transfer students.

2111 Physics: Mechanics and Heat (5) [MS,MI]

Prerequisite: Math 1900 [Math 1900 may be taken concurrently]. Phys 1001, or Chem 1121, or equivalent is recommended. An introduction to the phenomena, concepts, and laws of mechanics and heat for physics majors and students in other departments. Three classroom hours, one hour discussion, and two hours of laboratory per week.

2112 Physics: Electricity, Magnetism, and Optics (5) [MI,MS]

Prerequisites: Phys 2111 and Math 2000 may be taken concurrently. A phenomenological introduction to the concepts and laws of electricity and magnetism, electromagnetic waves, optics and electrical circuits for physics majors and students in other departments. Three classroom hours, one hour discussion, and two hours of laboratory per week.

3200 Mathematical Methods of Theoretical Physics (3)

Prerequisites: Phys 2112 and Math 2000. Mathematical techniques specifically used in the study of mechanics, electricity, magnetism, and quantum physics are developed in the context of various physical problems. Course includes the topics of vector calculus, coordinate systems, the Laplace equation and its solutions, elementary Fourier analysis, and complex variables. Applications to electrostatics, mechanics, and fluid dynamics are emphasized. Three classroom hours per week.

3221 Mechanics (3)

Prerequisites: Phys 3200 and Math 2020. Math 2020 may be taken concurrently. Advanced course covering single and many particle dynamics, rigid-body dynamics, and oscillations. Variational principles and the Lagrangian and Hamiltonian formulations of mechanics are covered. Three classroom hours per week.

3223 Electricity and Magnetism (3)

Prerequisites: Phys 3200 and Math 2020. Math 2020 may be taken concurrently. Advanced course covering the rigorous development, from basic laws, of Maxwell's equations for electromagnetic fields along with applications of these equations. Topics covered are electrostatics and electrodynamics including currents, magnetic fields, motion of charged particles in fields and an introduction to electromagnetic waves. Three classroom hours per week.

3231 Introduction to Modern Physics I (3)

Prerequisite: Phys 2111, 2112, and Math 2020 may be taken concurrently and Phys 3200 strongly recommended. Photons and the wave nature of particles, wave mechanics, Schroedinger equation, with applications to atomic physics; and radiation; the physics of solids; elementary particles; special relativity; health physics. Three classroom hours per week.

3281 Directed Readings in Physics (1-5)

Prerequisite: Consent of instructor. An independent study of special topics in physics. A paper may be required on an approved topic. Topics must be substantially different. Hours arranged.

3390 Research (1-10)

Prerequisite: Consent of department. Independent research projects arranged between student and instructor. Hours arranged.

3410 Seminar (1)

Presentation of selected papers by students and faculty members at weekly meeting. May be taken twice for credit.

4306 Emergent Microscopy Practicals (1-3)

Prerequisite: of 3 credit hours) A critical web-based/laboratory Consent of Instructor (1.0 credit hour per module with a maximum study of developing nanoworld microscopy techniques, designed for microscopy clients and future microscope operators. The course consist of larger set to include (a) electron microscopy, (b) materials microscopy, (c) scanned-probe microscopy, with each module covering instrumentation, wide ranging uses, and weaknesses to avoid. Each module requires two lab visits for hands-on experiences, and three sessions of structured web and e-mail interaction per week.

4307 Scanning Electron Microscopy (3)

Prerequisite: Consent of instructor. A lecture/laboratory study of scientific research techniques using scanning electron microscopy (SEM). Course includes electron gun/lens optics, beam-specimen interactions, image formation, associated x-ray techniques, and analysis of images. Two classroom hours and two hours laboratory each week.

4308 Transmission Electron Microscopy (3)

Prerequisite: Phys 4307 or consent of instructor. A lecture/laboratory study of transmission electron microscopy (TEM) in conventional, analytical, and phase-contrast (high resolution) applications. Course includes advanced electron optics and image formation, defect structures, specimen preparation, contrast theory, diffraction/periodicity analysis, and electron energy loss/x-ray spectroscopy. Two classroom hours and two hours laboratory per week.

4309 Scanning Probe Microscopy (3)

Prerequisite: Phys 4307 or consent of instructor. A lecture/laboratory study of research techniques using scanning probe microscopy. Topics include atomic force microscopy, scanning tunneling microscopy, feedback control, scanning tip fabrication, scan calibrations, air/solution/vacuum imaging, image processing and analysis, near-field optical probes, metrology, and lateral force/displacement microscopy. Applications in physics, chemistry, biology, engineering, and surface science are discussed. Two classroom hours and two hours laboratory per week.

4310 Modern Electronics (3)

An integrated recitation/laboratory study of modern analog and digital electronics with emphasis on integrated circuits. Topics include circuit elements, operational amplifiers, logic gates, counters, adc/dac converters, noise reduction, microprocessors, embedded microcontrollers, and digital processing. Six hours of laboratory per week.

4311 Advanced Physics Laboratory I (3)

Prerequisites: Advanced standing with at least nine completed hours of physics at or above the 3000 level. Physics majors are introduced to the experimental techniques used in research. A student will choose and do several special problems during the semester. Six hours of laboratory per week.

4323 Modern Optics (3)

Prerequisite: Phys 3223. A study of modern optics including diffraction theory, polarization, light propagation in solids, quantum optics, and coherence. Three classroom hours per week.

4325 Topics in Modern Applied Physics (3)

Prerequisites: Phys 4310 and Math 2020. Topics are taken from modern applications of physics which may include linear analysis, nonlinear analysis, Fourier transform

spectroscopy, wavelet analysis, noise and fluctuation phenomena, material science, physical electronics, optical techniques, and scanning tip microscopy. Three classroom hours per week.

4331 Introduction to Quantum Mechanics (3)

Prerequisites: Phys 3200 and 3231. Photons and the wave nature of particles; wave mechanics, the Schroedinger equation, operator and matrix formulations, and Dirac notation; applications to single particle systems, atomic physics, and spectroscopy. Three classroom hours per week.

4335 Atomic and Nuclear Physics (3)

Prerequisite: Phys 4331. Application of Schroedinger's equation to hydrogen-like atoms; atomic structure and spectra; nuclear masses, energy levels; alpha, beta, and gamma radiation, nuclear reactions, and models of the nucleus. Three classroom hours per week.

4341 Thermal and Statistical Physics (3)

Prerequisites: Math 2000 and Phys 3231. Introduction to statistical mechanics, classical thermodynamics and kinetic theory. Three classroom hours per week.

4343 Selected Topics in Physics I (3)

Prerequisites: Phys 3221, 3223, 3231, and 4341. Topics include special phenomena from research areas such as scattering of waves, biophysics, nonlinear physics, geophysical fluid dynamics and the atmospheric sciences treated by methods of advanced mechanics, thermodynamics and quantum mechanics. Three classroom hours per week.

4345 Nonlinear Dynamics and Stochastic Processes (3)

Prerequisites: Phys 3221 and 4341 and Consent of Instructor. Dynamical systems; theory of oscillations; introduction to bifurcation theory and chaos in dissipative systems with applications in physics and biology; introduction to stochastic processes with applications in physics, chemistry and biology; dynamics of nonlinear systems perturbed by noise; noise-induced phase transitions; linear and nonlinear time series analysis. Three classroom hours per week.

4347 Biophysics of Imaging (4)

Prerequisites: Phys 3231, Bio 1811, Bio 1821. An introduction to the application of physical principles to problems in medical physics and biology, with a particular focus on the biophysics of various technologies for imaging both human patients and biological macromolecules. Topics covered will include the principles of X-ray crystallography, metabolic and optical changes in the brain, NMR and fMRI, magnetoencephalography, PET imaging, the electrophysiology of EEG and ECG, dynamics in the body and brain, and dynamics in genetics. Laboratory projects on brain imaging and data analysis are an integral part of

the course. Three classroom hours and two laboratory hours per week.

4350 Computational Physics (3)

Prerequisite: CS 1250, plus Phys 3221, 3223, and 3231. Computer analysis in physics; solutions of eigenvalue problems; coupled differential equations. Three classroom hours per week.

4351 Elementary Solid State Physics (3)

Prerequisite: Phys 4331. Theoretical and experimental aspects of solid state physics, including one-dimensional band theory of solids; electron emission from metals and semiconductors; electrical and thermal conductivity of solids. Three classroom hours per week.

4353 Physics of Fluids (3)

Prerequisites: Phys 3221, 3223, and 4341, or consent of instructor. Dynamical theory of gases and liquids. Course covers the mathematical development of physical fluid dynamics with contemporary applications. Three classroom hours per week.

4354 Atmospheric Physics (3)

Prerequisite: Phys 4341 and 3221. The mathematical application of physical laws to atmospheric dynamics and physical meteorology. Application of mechanics, thermodynamics, optics, and radiation to atmospheric phenomena including the ionosphere. Three classroom hours per week.

4356 Quantum Optics (3)

Prerequisites: Phys 3200 and 3231, and Math 2020. Review of atomic theory and spectroscopy. Selected applications to modern optical phenomena such as optical pumping, lasers, masers, Mossbauer effect, and holography. Three classroom hours per week.

4357 Subatomic Physics (3)

Prerequisites: Phys 3223, 3231 and 4331, may be taken concurrently. Introduction to nuclear and particle physics. Nuclear phenomenology and models; high energy particle accelerators and detectors; phenomenology of strong, electromagnetic and weak interactions; symmetry principles; quark compositions of strongly interacting baryons and mesons; gauge theories and the standard model of particle interactions; grand unification. Three classroom hours per week.

4365 Introduction to Plasma Physics (3)

Prerequisite: Phys 3223 and 4341. A study of the nonlinear collective interactions of ions, electrons, and neutral molecules with each other and with electric and magnetic fields. Topics include plasma confinement and stability, electrical discharges and ionization, kinetic theory of plasma transport, plasma waves and radiation, and controlled fusion. Solutions of the Boltzmann, Fokker-Planck, and Vlasov equations are discussed and methods

of advanced electromagnetism and statistical physics are utilized. Three classroom hours per week.

4370 Relativity and Cosmology (3)

Prerequisites: Phys 3221, 3223, and 3231. An introduction to Einstein's general theory of relativity. Topics will include special relativity in the formalism of Minkowski's four dimensional space-time, Principle of Equivalence, Riemannian geometry and tensor analysis, Einstein Field Equation and cosmology. Three classroom hours per week.

4381 Directed Readings in Physics (1-10)

Prerequisite: Consent of instructor. An independent study of special topics in physics for senior undergraduates or graduate students.

4387 Chemistry/Physics Teaching Intern Seminar (1)

Same as Chem 4837. Prerequisite: Chem 4802 or Phys 4802. A seminar to accompany student teaching covering integration of physical science curricula and methods into the classroom setting. To be taken concurrently with Secondary Student Teaching, Sec Ed 3290 One hour discussion per week.

4802 Curriculum and Methods of Teaching Physical Sciences (3)

Prerequisite: Tch Ed 3310 and a near-major in the subject matter. A study of the scope and sequence of the physical science courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of science. To be taken prior to student teaching. This course must be completed in residence.

5402 Introduction to Mathematical Physics (3)

Prerequisites: Graduate standing in Physics or consent of instructor. A course covering mathematical techniques as applied in advanced theoretical physics including generalized vector spaces and their dual spaces, linear operators and functionals, generalized functions, spectral decomposition of operators, tensor analysis, and complex variables. Three classroom hours per week.

5403 Principles of Mathematical Physics (3)

Graduate standing in physics or consent of instructor. Boundary value problems; Sturm-Liouville theory and orthogonal functions; Green's function techniques; and introduction to group theory with emphasis on representations of Lie Algebras. Three classroom hours per week.

6400 Special Problems (1-5)

Prerequisites: Must have a faculty mentor and approval of the Department Chair. A study of special topics in physics for graduate students.

6401 Special Topics (1-4)

Prerequisite: Consent of instructor. This course is designed to give the Department an opportunity to test a new course.

6404 Experimental Research Techniques (3)

Prerequisite: Graduate standing. Experiments in various fields of physics designed to stress techniques and experimental approach.

6405 Theoretical Physics I (3)

Prerequisites: Phys 3221 and 3223 or equivalent. Newton's laws applied to simple systems, central force problem, variational principles. Lagrangian and Hamiltonian formulations, electrostatics. Maxwell field operations, wave propagation.

6406 Theoretical Physics II (3)

Prerequisites: Phys 3231, 4341, or equivalent, and Physics 6405. Schroedinger equation and wave mechanical treatment of simple systems: perturbation theory; identical particles and spin. Laws of thermodynamics, canonical systems; thermodynamic potentials and Maxwell equations, open systems, and chemical potential. Clausius-Clapeyron equation.

6407 Modern Physics (3)

Prerequisite: Phys 4331. A study of some of the more important concepts of modern physics.

6409 Theoretical Mechanics I (3)

Prerequisite: Phys 3221. Classical mechanics, methods of Newton, Lagrange, and Hamilton, applied to motion of particles and rigid bodies, elasticity, and hydrodynamics.

6410 Seminar (variable hours)

Prerequisite: Approval of department chair. Discussion of current topics.

6411 Electrodynamics I (3)

Prerequisite: Phys 3223. A rigorous development of the fundamentals of electromagnetic fields and waves. Electrostatics, magnetostatics, Maxwell's equations, Green's functions, boundary value problems, multipoles, and conservation laws.

6413 Statistical Mechanics (3)

Prerequisites: Phys 4331 and 4341. A study of statistical ensembles; Maxwell-Boltzmann, Fermi-Dirac, and Einstein-Bose distribution laws, application to some simple physical systems.

6415 Theoretical Mechanics II (3)

Prerequisite: Phys 6409. Transformation theory of mechanics, Lagrange and Poisson brackets, Hamilton-Jacobi theory, introduction to the classical theory of fields.

6417 Advanced Statistical Mechanics (3)

Prerequisite: Phys 6413. A continuation of Phys 6413. Further applications as to such topics as the imperfect gas,

condensation and the critical region, magnetism, liquid state, and transport phenomena.

6423 Electrodynamics II (3)

Prerequisite: Phys 6411. A continuation of Phys 6411. Applications of time-dependent Maxwell's equations to such topics as plasmas, wave guides, cavities, radiation: fields of simple systems and multipoles. Relativity: covariant formulation of Maxwell's equations and conservation laws, fields of uniformly moving and accelerated charges.

6425 Plasma Physics (3)

Prerequisites: Phys 4341 and 6411. Fundamentals of kinetic theory, fluid equations, MHD equations, and applications; wave propagation, shielding effect, diffusion stability, and charged particle trajectories.

6435 Cloud Physics (3)

Prerequisites: Phys 3223 and 4341. A study of cloud microphysics and dynamics, atmospheric condensation and freezing nuclei, phase, precipitation mechanisms, aerosol scavenging, role of electrification, current dynamical models, and review of diagnostic techniques.

6455 Theoretical Nuclear Physics (3)

Prerequisite: Phys 6461. A study of the basic properties of nuclei, nuclear scattering and forces, nuclear reactions, and models.

6461 Quantum Mechanics I (3)

Prerequisite: Phys 4331. A study of the Schroedinger wave equation, operators and matrices, perturbation theory, collision, and scattering problems.

6463 Quantum Mechanics II (3)

Prerequisite: Phys 6461. Continuation of Phys 6461 to include such topics as Pauli spin-operator theory, classification of atomic states, introduction to field quantization. Dirac electron theory.

6465 Quantum Mechanics III (3)

Prerequisites: Phys 6461 and 6463. Topics chosen from such fields as: relativistic quantum mechanics, potential scattering, formal collision theory, group theoretical methods in quantum mechanics, electrodynamics.

6467 Quantum Statistical Mechanics (3)

Prerequisites: Phys 6413 and 6463. Techniques for calculation of the partition function with examples drawn from interacting Fermi gas, interacting Bose gas, superconductors, and similar sources.

6471 Atomic and Molecular Structure (3)

Prerequisite: Phys 6461. Applications of quantum mechanics to the structure of atoms and molecules; perturbation and variational calculations, self-consistent fields, multiplets, angular momenta, Thomas-Fermi model, diatomic molecules, spectral intensities.

6473 Atomic Collision Theory (3)

Prerequisite: Phys 6471 or 6463. Basic quantum mechanical concepts involved in atomic scattering theory. Topics include: elastic and inelastic collisions of electrons and ions with neutral atoms and molecules; collisions between heavy particles; curve crossing; photo-processes; and Coulomb wave functions.

6475 Molecular Spectroscopy (3)

Prerequisite: Phys 6461. Introduction to classical and quantum treatment of the vibrational and rotational structure and spectra of diatomic, linear triatomic, and simple polyatomic molecules: vibrational-rotational interactions, point group symmetry in simple infrared spectra analysis, calculations of vibrational frequencies, and normal coordinates of polyatomic atoms.

6481 Physics of the Solid State (3)

Prerequisite: Phys 6461. Crystal symmetry, point and space groups, lattice vibrations, phonons, one-electron model, Hartree-Fock approximation, elementary energy band theory transport properties, the Boltzmann equation, introduction to superconductivity, semiconductors, and magnetism.

6483 Selected Topics of the Solid State (3)

Prerequisite: Phys 6481. Introduction to many-body perturbation theory, the use of Feynman diagrams. Green's functions, treatment of the electron-electron, phonon-phonon, and electron-phonon interactions, theory of magnetism, and theory of superconductivity

6485 Advanced Quantum Mechanics (3)

Prerequisite: Phys 6465. Selected topics such as many-body problems field theory, S matrix theory and symmetries.

6490 Research (variable hours)

Prerequisites: Must have a faculty mentor and approval of the Department Chair. Investigations of an advanced nature leading to the preparation of a thesis or dissertation.

6493 Oral Examination

After completion of all other program requirements, oral examinations for on campus students may be processed during the first two weeks of an academic session or at any appropriate time for off-campus students upon enrollment in Phys 6493 and payment of an oral examination fee. All other students must enroll for credit commensurate with uses made of facilities and/or faculties. In no case shall this be for less than three semester hours for resident students.

6495 Continuous Registration

Doctoral candidates who have completed all requirements for the degree except the dissertation, and are away from the campus, must continue to enroll for at least one hour of credit each registration period until the degree is completed. Failure to do so may invalidate the candidacy.

Billing will be automatic as will registration upon payment.

Department of Political Science

Faculty

Lana Stein, Professor*, Chairperson
Ph.D., Michigan State University
E. Terrence Jones, Professor*
Ph.D., Georgetown University
Dennis R. Judd, Professor Emeritus
Ph.D., University of Illinois
Carol W. Kohfeld, Professor Emerita
Ph.D., Washington University
Joyce M. Mushaben, Professor*
Ph.D., Indiana University
David B. Robertson, Professor*
Ph.D., Indiana University
J. Martin Rochester, Distinguished Teaching Professor*
Ph.D., Syracuse University
Lyman Tower Sargent, Professor Emeritus
Ph.D., University of Minnesota
G. Eduardo Silva, Professor*, Graduate Director
Ph.D., University of California-San Diego
J. Fred Springer, Professor Emeritus
Ph.D., University of California-Davis
Brady Baybeck, Associate Professor*, Director
Public Policy Administration
Ph.D., Washington University
Andrew Glassberg, Associate Professor*
Ph.D., Yale University
Joel N. Glassman, Associate Professor*, Director, Center
for International Studies, Associate Vice Provost for
Academic Affairs
Ph.D., University of Michigan
Barbara L. Graham, Associate Professor*
Ph.D., Washington University
Jean-Germain Gros, Associate Professor*
Ph.D., University of California-Berkeley
Ruth Iyob, Associate Professor*
Ph.D., University of California-Santa Barbara
David C. Kimball, Associate Professor*
Ph.D., Ohio State University
Kenneth P. Thomas, Associate Professor*
Ph.D., University of Chicago
Brian Fogarty, Assistant Professor*
Ph.D., University of North Carolina at Chapel Hill
Farida Jalalzai, Assistant Professor*
Ph.D., University of Buffalo
Nancy T. Kinney, Assistant Professor*
Ph.D., University of Colorado at Denver
Richard Middleton IV, Assistant Professor*
Ph.D., University of Missouri-Columbia

*members of Graduate Faculty

Political Science faculty are nationally known scholars in their respective fields, dedicated to high-quality teaching and education. Department faculty members have received distinctions such as the Presidential Award for Research and Creativity, Chancellor's Award for Research and

Creativity, Chancellor's Award for Excellence in Teaching, Governor's Teaching Awards, Burlington Northern Faculty Achievement Award, and Emerson Electric Excellence in Teaching Award. They have received research grants from such prestigious agencies as the John F. Kennedy Library, the Ford Foundation, the MacArthur Foundation, the National Science Foundation, the German Marshall Fund, the United States Department of Education, the Fulbright Program, and the United States Institute for Peace. The faculty has published its research in more than 80 books and 400 articles in scholarly journals and is devoted to using its research findings to improve teaching.

In 1987, the Department of Political Science was designated as a Center of Eminence by the Board of Curators. This makes political science one of only two such programs on the St. Louis campus and ten in the entire University of Missouri system to be so designated. The department was selected because of its excellence in research and teaching.

In addition to helping students become more knowledgeable about politics and public policy, political science course work provides rich opportunities for students to develop a variety of practical skills--such as information-gathering and processing, analysis, research, decision making and oral and written communication--that are transferable to many career paths and job settings after graduation.

General Information

Degrees and Areas of Concentration

The political science department offers undergraduate work leading to the B.A. degree in political science, B.S. degree in public policy and administration, and, in cooperation with the College of Education, the B.A. in political science with teacher certification and the E.S. in education with an emphasis in social studies. (See College of Education section in this *Bulletin* for details.) Minors in political science are available to students who are majoring in another discipline and who have a special interest in law, government, politics, and public policy.

Principal areas of concentration include urban politics, American political processes and behavior, international politics, comparative politics, public policy and administration, public law, and political theory. In many courses, emphasis is placed on the ways in which public policies are developed and administered. In addition to formal course work, internships are available in which the student can relate classroom learning to practical field experience.

The political science department also offers graduate courses leading to the M.A. and Ph.D. in political science. The M.A. program in political science offers advanced education for those seeking careers in government,

business, secondary education, community, or not-for-profit agencies. The principal foci of the 33-hour program are public administration and public policy analysis/evaluation in the local, state, national, and international areas. The flexibility of the general master's degree allows for individualized programs in urban politics, prelegal education, American national government, comparative politics, international relations, and political theory.

The Ph.D. in political science emphasizes the study of theoretic, analytic, and substantive approaches to public policy. Core courses include research methods, normative and empirical theory, and policy processes and institutions. Doctoral candidates, in consultation with the faculty, develop a policy concentration, which can be interdisciplinary. Internships, when appropriate, may be a component. All successful doctoral candidates must complete a dissertation, which makes a significant contribution to knowledge in the field.

Most graduate classes are scheduled so those employed outside the university can participate in the programs on a part-time basis. Financial assistance is available to full-time students.

Special Interdisciplinary Degree

The Department of Political Science also cooperates with the Department of Economics in the College of Arts and Sciences and the College of Business Administration in offering a master's degree in public policy administration (MPPA). For information on the MPPA degree program, see that section in this *Bulletin*.

Cooperative Programs

Political science students may also study overseas, or obtain a certificate in international studies, European studies, African Studies, East Asian studies, Latin American studies, women's studies, or writing, in conjunction with their political science major. See Certificate Programs in this *Bulletin* and consult with the Center for International Studies.

Research in political science is encouraged for students at all levels. Assistance is available at UM-St. Louis' Public Policy Research Centers, the Center for International Studies, and the Office of Computing. The department's membership in the Interuniversity Consortium for Political and Social Research provides access to a wide range of survey data on local-state-national, comparative, and international politics. In addition, extensive research opportunities are available within the metropolitan St. Louis area. Scholarships are available for qualified students; details can be obtained from the department office.

Undergraduate Studies

General Education Requirements

Majors must satisfy the university and college general education requirements. Political science courses may be used to satisfy the social sciences requirement. The foreign language requirement for the B.A. degree may be satisfied in any language.

Departmental Honors

The department awards honors to students having a grade point average (GPA) of 3.2 in the major, an overall GPA of 3.2 (except in extraordinary circumstances), and successfully completed an honors thesis, project, or report.

Degree Requirements

Bachelor of Arts in Political Science

All majors must complete at least 36, but not more than 45, hours of political science. All students are required to take the following core curriculum:

Poli Sci

1100, Introduction to American Politics
1500, Introduction to Comparative Politics
2000, Political Analysis
3950, Senior Seminar in Political Science

Majors are urged to take Pol Sci 1100, 1500, and 2000 as early as possible since these courses are designed to provide a substantive foundation as well as conceptual and analytical tools for subsequent course work. Because the seminar topics in Pol Sci 3950 change from semester to semester, the course can be repeated as an elective. All majors must take at least one Seminar in Political Science.

Students also must complete at least one course in **four** of the following political science areas:

Public Law (chosen from among courses listed in bulletin at the 1000, 2000, or 3000 or 4000 level)

American Politics (chosen from among courses listed in bulletin at the 1000, 2000, or 3000 or 4000 level).

Public Policy and Administration (chosen from among courses listed in bulletin at the 1000, 2000, or 3000 or 4000 level).

Comparative Politics (chosen from among courses listed in bulletin at the 1000, 2000, or 3000 or 4000 level).

Political Theory (chosen from among courses listed in bulletin at the 1000, 2000, or 3000 or 4000 level).

International Relations (chosen from among courses listed in bulletin at the 1000, 2000, or 3000 or 4000 level).

Methodology (chosen from among courses listed in bulletin at the 1000, 2000, or 3000 or 4000 level).

At least **18 hours** of political science course work must be at the 2000, 3000 or 4000 level, not including Pol Sci 2000. B.A. degree students may take a maximum of 3 hours of political science on a satisfactory/unsatisfactory

basis; this can include any course except the required courses in the core curriculum.

Note: As early as possible, students should determine their educational objectives and consult with an adviser regarding a plan of study. *Those students who are uncertain of their future plans are urged to include in their 36-45 hours of political science a broad set of courses in American politics, public policy and administration, public law, comparative politics, international politics, political theory, and methodology.* In addition to this general course of study in political science, the department offers B.A. degree students several specialized programs of study in political science geared to various student academic and career interests.

Graduate School Preparation

This program is designed for students planning to pursue graduate studies in political science, particularly the Ph.D. degree, with the aim of a career as either an academic or practitioner (working as a researcher, policy analyst, or in some other capacity calling for advanced knowledge and skills). In addition to the core curriculum and common requirements for all political science majors, students are advised to (1) take as many political science courses at the 2000 and 3000 or 4000 level as possible in a variety of areas (public law, American politics, comparative and international politics, etc.), (2) complete a departmental honors project based on independent research and writing in Pol Sci 3900, Special Readings, and (3) give special consideration to courses in normative political theory (such as Pol Sci 2620, Modern Political Thought) and research methods (such as Pol Sci 6401, Introduction to Policy Research, which is a graduate course open to undergraduates with Graduate School approval). Students are also encouraged to take course work outside the department in microeconomics, macroeconomics, and statistics.

Legal Studies

This is an ideal program of study for double majors in political science and criminal justice or for any student interested in law school and a career in the law. In addition to the core curriculum and common requirements for all political science majors, students are advised to take Pol Sci 1200, Foundations of Law: An Introduction to Legal Studies, and at least four of the following political science courses:

- 2260, Law and the Individual
- 2280, Judicial Politics and Policy
- 2290, Women and the Law
- 2650, American Political Thought
- 2900, Studies in Political Science (when appropriate)
- 3200, Constitutional Law
- 3210, Civil Liberties
- 3260, The Supreme Court
- 3290, Studies in Public Law
- 3900, Special Readings (when appropriate)

3940, Public Affairs Internship (when appropriate)

4850, International Law

Students are also advised to take political science course work that gives them a strong background in American political institutions and processes. Those students considering practicing law in the international arena should take course work in comparative and international politics. Political science course work may be supplemented by course work in criminal justice and criminology.

American Politics

Designed for those students interested in careers in communications, education, business, social work, political consulting, and other fields requiring knowledge of American urban, state, and national politics and institutions. Education majors planning to teach in the social studies field, communications majors planning on a career in journalism, or business majors thinking about working in corporate relations may especially wish to consider a double major in political science with a focus in this area. In addition to the core curriculum and common requirements for all majors, students are advised to take at least five of the following political science courses:

- 1990, The City
- 2280, Judicial Politics and Policy
- 2300, State Politics
- 2320, African Americans and the Political System
- 2350, Introduction to Urban Politics
- 2380, Women in U.S. politics
- 2420, Introduction to Public Policy
- 2650, American Political Thought
- 2820, United States Foreign Policy
- 2900, Studies in Political Science (when appropriate)
- 3300, The American Presidency
- 3330, Introduction to Political Behavior
- 3331, Congressional Politics
- 3340, Politics and the Media
- 3350, Political Parties and Elections
- 3370, Mock Constitutional Convention
- 3390, Studies in American Politics
- 3480, Environmental Politics
- 3900, Special Readings (when appropriate)
- 3940, Public Affairs Internship (when appropriate)

In addition, students may wish to choose other political science courses listed below under the public policy and administration program of study. Given the growing reality of international interdependence, students should not restrict their studies completely to American politics but should take some course work in comparative and international politics as well. Depending on their specific career interest, students may wish to round out their program with course work in other social science departments such as criminal justice, communications, economics, or social work.

Public Policy and Administration

Designed for students interested in working inside or outside government, in a career requiring familiarity with how public policies are formulated and implemented. (Students alternatively may wish to consider the B.S. in public policy and administration degree offered by the political science department.) In addition to the core curriculum and common requirements for all majors, students are advised to take Pol Sci 2420, Introduction to Public Policy, and at least four of the following political science courses:

- 2400, Public Administration
- 2820, United States Foreign Policy
- 2900, Studies in Political Science (when appropriate)
- 3400, Bureaucratic Politics
- 3410, The Politics of Business Regulation
- 3420, Public Personnel Management
- 3439, Studies in Policy Formation
- 3440, Public Budgeting
- 3450, Urban Administration
- 3460, The Politics of Poverty and Welfare
- 3480, Environmental Politics
- 3490, Studies in Public Administration
- 3570, Gender, Race, and Public Policy
- 3940, Public Affairs Internship (when appropriate)
- 3900, Special Readings (when appropriate)
- 4080, Program Evaluation
- 4470, Urban Planning and Politics
- 4510, Comparative Public Policy and Administration
- 4940, Leadership and Management in Nonprofit Organizations

Depending on career interests, students should add course work in American, comparative, or international politics. Students are encouraged to develop a policy concentration in a particular policy area, such as urban, labor, health, education, and business studies, with multidisciplinary course work taken in political science and other departments.

International and Comparative Studies

Designed for students interested in international careers in government service (not only the U.S. State Department but also other federal government agencies), intergovernmental and non-governmental organizations, business, education, and other areas of employment. In addition to the core curriculum and common requirements for all political science majors, students are advised to take Pol Sci 1800, World Politics, or Pol Sci 2500, Comparing Different Worlds, and at least four of the following political science courses (some of which are international politics courses that focus on conflict and cooperation between countries, and some of which are comparative politics courses that focus on political, economic, and social change within countries):

- 1600, Contemporary Political Ideologies
- 1820, Global Issues
- 1850, Global Ecology

- 2510, Comparative Politics of Europe
- 2520, Middle Eastern Politics
- 2530, Political Systems of South America
- 2540, Political Systems of Mexico, Central America, and the Caribbean
- 2550, East Asian Politics
- 2560, Russia and the New Republics
- 2580, African Politics
- 2800, Model United Nations
- 2820, United States Foreign Policy
- 2900, Studies in Political Science (when appropriate)
- 3570, Gender, Race, and Public Policy
- 3590, Studies in Comparative Politics
- 3690, The Marxist Heritage
- 3830, International Political Economy
- 3840, European International Relations
- 3850, International Organizations and Global Problem Solving
- 3860, Studies in War and Peace
- 3890, Studies in International Relations
- 3900, Special Readings (when appropriate)
- 3940, Public Affairs Internship (when appropriate)
- 4510, Comparative Public Policy and Administration
- 4550, Democratization in Comparative Perspective
- 4850, International Law

Students interested in working for the U.S. Foreign Service, American-based multinational companies, and nonprofit organizations should also take course work that familiarizes them with the American political system and how public policy is made. Students should explore the various interdisciplinary area studies and international studies certificate programs offered through the Center for International Studies.

Bachelor of Science in Public Policy and Administration

The BSPA degree has two emphasis areas. The first is a public administration track, which emphasizes management in both the public and nonprofit sectors; it may produce a terminal degree or be a precursor to graduate training. The second is a public policy track in which a student may focus on a particular policy area and also acquire specialized analytic training and research skills, in preparation for relevant entry-level jobs in the public or the voluntary sector as well as in certain parts of the private sector.

All BSPA majors must complete at least 33, but no more than 45, hours in political science. The following core curriculum is required of all BSPA majors:

Political Science

- 1100, Introduction to American Politics
- 1500, Introduction to Comparative Politics
- 2000, Political Analysis
- 2400, Public Administration
- 2420, Introduction to Public Policy
- 3940, Public Affairs Internship

3950, Senior Seminar in Political Science
Econ 1001, Principles of Microeconomics
Econ 1002, Principles of Macroeconomics
CCJ 2220, Statistical Analysis in Criminology and Criminal Justice or
Sociology 3220, Sociological Statistics or
Econ 3100, Economic Statistics
In addition, students must provide a demonstration of computer proficiency through one of the following:
BA 1800, Computers and Information Systems, extension courses, or other study approved by the BSPA coordinator.

BSPA students may take a maximum of 3 hours of political science on a satisfactory/unsatisfactory basis, except for the following (which may not be taken on a satisfactory/unsatisfactory basis): Pol Sci 1100, 1500, 2400, 2000, 2420, 3940, and 3950.

Public Administration Emphasis Area

In addition to the core curriculum requirements for all BSPA majors, students in the public administration emphasis area are required to complete the following courses:

Pol Sci 3420, Public Personnel Management
Pol Sci 3440, Public Budgeting
BA 2400, Fundamentals of Financial Accounting

Students in the public administration emphasis area also must take two of the political science courses listed under policy and institutions courses below, as well as take at least two additional elective courses chosen from among that list or any other political science offerings.

Public Policy Emphasis Area

In addition to the core curriculum requirements for all BSPA majors, students in the public policy emphasis area must take four political science courses, preferably selected from the policy and institutions courses listed below but which may include other political science course offerings as well.

Policy and Institutions Courses:

1450, Introduction to Labor Studies
2280, Judicial Politics and Policy
2300, State Politics
2350, Introduction to Urban Politics
3300, The American Presidency
3331, Congressional Politics
3400, Bureaucratic Politics
3430, Union Leadership and Administration
3439, Studies in Policy Formation
3450, Urban Administration
3460, The Politics of Poverty and Welfare
3480, Environmental Politics
4470, Urban Planning and Politics
4510, Comparative Public Policy and Administration
4940, Leadership and Management in Nonprofit Organizations

Students will adopt a policy concentration of at least 15 credit hours. Possible areas of specialization include, but are not limited to, environmental policy, government and business, society and the legal system, urban policy, labor studies, health care, human services, and nonprofit service provision. In fulfilling the concentration requirement, students, in consultation with the BSPA coordinator, will select courses from related disciplines in addition to taking two more political science courses related to the policy area beyond the four political science courses already required.

Note: Students considering the B.S. in public policy and administration should see a political science adviser as early as possible to plan their program.

Requirements for the Minors

A general minor in political science can be arranged, as well as specialized minors in eight different subfields of the discipline. Interested students should see a faculty adviser to plan a coherent program of study as a minor field.

Students must achieve a cumulative 2.0 GPA in the political science courses chosen to qualify for the minor. Students may count no more than 3 hours in political science taken on a satisfactory/unsatisfactory basis toward the minor. Students taking an internship Political Science 3940 may count no more than three hours of the internship toward the minor.

Minor in Political Science, General

Fifteen hours, chosen from among all political science courses.

Minor in American Politics

Fifteen hours, chosen from the following political science courses:

1100, Introduction to American Politics
2300, State Politics
2350, Introduction to Urban Politics
2650, American Political Thought
2280, Judicial Politics and Policy
3300, The American Presidency
3331, Congressional Politics
2320, African Americans and the Political System
3260, The Supreme Court
3330, Introduction to Political Behavior
3340, Politics and the Media
3350, Political Parties and Elections
2380, Women in U.S. Politics
3410, The Politics of Business Regulation
2420, Introduction to Public Policy
2820, United States Foreign Policy
3940, Public Affairs Internship (when appropriate)
3390, Studies in American Politics
3370, Mock Constitutional Convention
3900, Special Readings (when appropriate)

Minor in Comparative Politics

Political Science 1500, Introduction to Comparative Politics, plus 12 hours from the following political science courses:

- 2500, Comparing Different Worlds
- 2510, Comparative Politics of Europe
- 2530, Political Systems of South America
- 2540, Political Systems of Mexico, Central America, and the Caribbean
- 2550, East Asian Politics
- 2560, Russia and the New Republics
- 2580, African Politics
- 3570, Gender, Race, and Public Policy
- 3590, Studies in Comparative Politics
- 3900, Special Readings (when appropriate)
- 4510, Comparative Public Policy Administration
- 4550, Democratization in Comparative Perspective

Minor in International Relations

Fifteen hours, chosen from the following political science courses:

- 1800, World Politics
- 1820, Global Issues
- 1850, Global Ecology
- 2520, Middle Eastern Politics
- 2820, United States Foreign Policy
- 3830, International Political Economy
- 3840, European International Relations
- 3850, International Organizations and Global Problem-Solving
- 3860, Studies in War and Peace
- 3890, Studies in International Relations
- 3900, Special Readings (when appropriate)
- 3940, Public Affairs Internship (when appropriate)
- 4850, International Law

Minor in Political Theory

Fifteen hours, chosen from the following political science courses:

- 1600, Contemporary Political Ideologies
- 2610, Ancient and Medieval Political Thought
- 2620, Modern Political Thought
- 2650, American Political Thought
- 3680, Feminist Political Theory
- 3690, The Marxist Heritage
- 3690, Studies in Political Theory
- 3900, Special Readings (when appropriate)

Minor in Public Administration

Political Science 2400, Public Administration, plus 12 hours chosen from the following political science courses:

- 2420, Introduction to Public Policy
- 3400, Bureaucratic Politics
- 3410, Politics of Business Regulation
- 3420, Public Personnel Management
- 3439, Studies in Policy Formation
- 3440, Public Budgeting
- 3450, Urban Administration
- 3490, Studies in Public Administration

3900, Special Readings (when appropriate)

3940, Public Affairs Internship (when appropriate)

4080, Program Evaluation

4470, Urban Planning and Politics

4510, Comparative Public Policy and Administration

Minor in Public Law

Fifteen hours, chosen from the following political science courses:

- 1200, Foundations of Law: An Introduction to Legal Studies
- 2260, Law and the Individual
- 2280, Judicial Politics and Policy
- 2290, Women and the Law
- 3200, Constitutional Law
- 3210, Civil Liberties
- 3260, The Supreme Court
- 3290, Studies in Public Law
- 3900, Special Readings (when appropriate)
- 4850, International Law

Minor in Public Policy

Political Science 2420, Introduction to Public Policy, plus 12 hours chosen from the following political science courses:

- 2300, State Politics
- 2350, Introduction to Urban Politics
- 2400, Public Administration
- 3300, The American Presidency
- 3400, Bureaucratic Politics
- 3410, The Politics of Business Regulation
- 3440, Public Budgeting
- 3450, Urban Administration
- 3460, The Politics of Poverty and Welfare
- 3480, Environmental Politics
- 3570, Gender, Race, and Public Policy
- 3900, Special Readings (when appropriate)
- 3940, Public Affairs Internship (when appropriate)
- 4080, Program Evaluation
- 4470, Urban Planning and Politics
- 4510, Comparative Public Policy and Administration

Minor in Urban Politics

Political Science 2350, Introduction to Urban Politics, plus 12 hours chosen from the following political science courses:

- 2320, African-Americans and the Political System
- 3450, Urban Administration
- 3460, The Politics of Poverty and Welfare
- 3900, Special Readings (when appropriate)
- 3940, Public Affairs Internship (when appropriate)
- 4470, Urban Planning and Politics

Minor in Women and Politics

PS 1550, Women and Politics in the Developing World and 12 hours from among the following political science courses:

- PS 2290, Woman and the Law
- PS 2380, Women in U.S. Politics

PS 3439, Studies in Policy Formation (consent of instructor required)
PS 3460, The Politics of Poverty and Welfare
PS 3570, Gender, Race, and Public Policy (Comparative)
PS 3590, Politics, Leadership and the Global Gender Gap
PS 3680, Feminist Political Theory
PS 3900, Special Readings (consent of instructor required)
PS 4940, Leadership and Management in Nonprofit Organizations (consent of instructor)

Bachelor of Arts with Teacher Certification

For information, refer to the College of Education section in this *Bulletin*.

Bachelor of Science in Education: Emphasis in Social Studies

The Political Science requirements are the same as for the B.A. degree except students fulfill the College of Education general education requirements rather than those of the College of Arts and Sciences. For information, refer to the College of Education section in this *Bulletin*.

Graduate Studies

2+3 B.A. and M.A. in Political Science

The 2+3 Combined BA/MA program in Political Science provides an opportunity for students of recognized academic ability and educational maturity to complete the requirements for both degrees in 5 years of fulltime study.

The combined program requires a minimum of 140 credit hours of which at least 33 must be at the graduate level in political science. In qualifying for the BA, students must meet all University and College requirements. Students in the combined 2+3 who successfully complete the requirements for the MA degree will be awarded a BA degree simultaneously upon completion of at least 107 hours of undergraduate credit.

Student should apply to the Department for admission to the 2+3 combined degree program in Political Science during the semester they will complete 60 undergraduate credit hours. A cumulative grade point average of 3.0 or higher and three letters of recommendation from faculty are required. Students will be admitted to the 2+3 program under provisional status until they have completed 30 hours in that program with a grade point of 3.0 or higher. After completion of the provisional period, with the recommendation of the Graduate Director, students can be granted full admission into the 2+3 program.

Students must maintain a grade point average of 3.0 or higher throughout the combined program. Students who officially withdraw from the 2+3 combined degree program, who have successfully completed all the regular requirements for the BA degree (120 hours) will be awarded their BA degree.

Undergraduate Requirements for Student in the 2+3 Program

A. The following must be completed prior to enrolling in the 2+3 program

1. Students must take

PS 1100, Introduction to American Politics
PS 1500, Introduction to Comparative Politics

2. PLUS two of the following:

PS 1600, Contemporary Political Theory
PS 1800, World Politics
PS 2300, State Politics
PS 2350, Introduction to Urban Politics
PS 2400, Introduction to Public Administration
PS 2650, American Political Thought

B. Undergraduate Requirements within the 2+3 Program

1. Two of the following:

PS 2280, Judicial Politics and Policy
PS 2620, Modern Political Thought
PS 3200, Constitutional Law
PS 3210, Civil Liberties
PS 3300, The American Presidency
PS 3331, Congressional Politics
PS 3350, Political Parties and Elections
PS 3470, Gender, Race and Public Policy
PS 3480, Environmental Politics

2. PLUS two of the following:

PS 2510, Comparative Politics of Europe
PS 2520, Middle Eastern Politics
PS 2530, Political Systems of South America
PS 2540, Political Systems of Mexico, Central American & the Caribbean
PS 2580, African Politics
PS 3690, The Marxist Heritage (Phil 269; ID 269)
PS 3830, International Political Economy
PS 3850, International Organizations and Global Problem Solving
PS 4850, International Law

3. Plus one additional course from B-1 or B-2

C. Graduate Requirements

1. PS 6401, Introduction to Policy Research (3 credits)

2. PLUS 3 of the following (9 credits):

PS 6420, Proseminar in Public Law
PS 6430, Proseminar in American Politics
PS 6440, Proseminar in Public Policy Administration

PS 6450, Proseminar in Comparative Politics

PS 6460, Proseminar in Political Theory

PS 6470, Proseminar in Urban Politics

PS 6480, Proseminar in International Relations

3. PLUS 5 additional graduate Political Science classes (15 credits).

Students should select an emphasis in American

Politics, Public Policy, Comparative Politics, Political Theory, or International Relations.

4. PLUS Exit Project or Internship or Thesis (6 credits)

Summary of Credits in Political Science:

BA: 27 hours (12 completed in lower division courses before admission to the 2+3 program)

MA: 33 hours at the graduate level

TOTAL: 60 hours in Political Science classes

Master of Arts in Political Science

Admission Requirements

For admission, a student should have a baccalaureate degree with a minimum grade point average of 2.75 and an undergraduate background in the social sciences. The GRE is required, and scores should be submitted at the time of application. Two letters of recommendation are also requested for each student applying to the program. Students who do not meet these requirements may be admitted upon approval of the department and the dean of the Graduate School. Application materials may be obtained from and should be returned to the office of the director of admissions.

Deadlines are July 1 for the fall semester; December 1 for the winter semester; and May 1 for the summer term.

Degree Requirements

Beyond the general requirements of the Graduate School, the department requires a minimum of 27 semester hours of course work, of which 18 hours must be at the 6400 level and 12 hours must be in core courses in political science, including:

- 6401, Introduction to Policy Research
- and three of the following political science courses:
- 6410, Introduction to Policy Analysis
- 6420, Proseminar in Public Law
- 6430, Proseminar in American Politics
- 6440, Proseminar in Public Policy Administration
- 6450, Proseminar in Comparative Politics
- 6460, Proseminar in Political Theory
- 6470, Proseminar in Urban Politics
- 6480, Proseminar in International Relations

Students can plan their degree program to reflect the following six emphasis areas:

- American Politics
- Comparative Politics
- International Politics
- Political Process and Behavior
- Public Administration and Public Policy
- Urban and Regional Politics

Students must also select one of the following exit projects: a six-hour thesis, a six-hour internship, or six

hours of additional course work and an approved paper. Students will have a mid-program review at the end of 12-15 hours of course work, at which time they will discuss their academic performance and program with a faculty committee and determine the most appropriate exit project. Each candidate is given a final oral review conducted by a faculty committee and focused on the course work completed and the student's chosen exit project.

Ph.D. in Political Science

The doctoral program emphasizes theoretical, analytic, and substantive approaches to public policy analysis and administration. Students are provided an opportunity to link core skills in policy analysis and political science with substantive emphasis in specific policy areas. The program is designed to prepare pre-career and mid-career students for advanced positions in policy research and administration, as well as for academic research and teaching.

Admission Requirements

Admission and financial aid decisions are made on the basis of past academic record, intellectual ability, and career commitment and performance. Applications are accepted from students who have either baccalaureate or master's degrees. Past graduate work will be credited toward degree requirements as appropriate. Applicants must submit a) complete academic transcripts, b) three letters of recommendation, c) aptitude tests of the GRE and d) a statement of objectives for the course of study. Application materials may be obtained from and should be returned to the office of the director of admissions. Applications for fall semester should be submitted by February 15 and for winter semester by October 15.

Graduate Assistantships

Stipends for teaching and research assistantships (nine month/20 hours per week) are awarded on a competitive basis. Out-of-state educational fees are waived for graduate assistants.

Degree Requirements

The department requires 60 credit hours beyond the baccalaureate degree for completion of the Ph.D. To ensure sufficient background for doctoral-level policy courses, students must demonstrate appropriate competence in computing and intermediate economics during their course of study. Course requirements are as follows:

Core courses (24 credit hours)

24 credit hours will be required in the areas of research methods, normative and empirical theory, and policy process and institutions. Contact the department for specific courses.

Additional Requirements (12 credit hours)

In addition, students will select a minimum of 12 credit hours in public policy, theory, or process.

Policy Concentration (15 credit hours)

Students, in consultation with the program director, will develop expertise in a substantive policy area. Policy concentrations (many interdisciplinary) include:

American National Policy
Urban Politics and Planning
Comparative/International Policy
Policy Analysis and Research Social Welfare

Internship (6 credit hours) optional

The Ph.D. intern program offers an opportunity to gain first-hand experience in select research and administrative positions.

General Examination and Dissertation

Upon completion of course work, students are advanced to candidacy by successfully completing two general examinations, the first covering the fields of public policy institutions, processes, and analysis, and the second covering the student's chosen subfield and area of policy concentration. The degree is awarded upon completion and defense of the Ph.D. dissertation.

Career Outlook

Bachelor of Arts, Bachelor of Science, and Master of Arts in Political Science

Political science graduates have done well in obtaining appropriate employment and in pursuing graduate education. Majors develop communications and decision-making skills, learn to analyze complex policy issues, both domestic and international in scope, and have a thorough understanding of government and politics. Political science is a particularly good undergraduate major for pre-law students. Many other majors pursue graduate education in business, education, public administration, public policy administration, journalism, public relations, non-profit organizations, and many other fields. Guides to careers in political science are available in the department office.

Ph.D. in Political Science

The Ph.D. in political science prepares students for three career areas: 1) government leadership and management positions at the local, state, and federal levels (both for new employees and in-service employees); 2) careers in the private sector, particularly positions in public affairs, policy research, and governmental relations departments of corporations, as well as consulting firms and nonprofit organizations; and 3) research and teaching careers in academic institutions.

Requests for further information about the M.A. or Ph.D. program should be sent to the Director of Graduate Studies, Department of Political Science, University of Missouri-St. Louis, One University Blvd, 347 SSB, St. Louis, MO 63121-4499.

Course Descriptions

Students who have earned 24 or more semester hours of credit at any accredited post-secondary institutions(s) before the start of the fall 2002 semester must meet the general education requirements stipulated in the UM-St Louis 2001-2002 Bulletin. The following courses fulfill the Social Sciences breadth of study requirements as described in that Bulletin: 1100, *1220, 1450, 1500, 1550, 1600, 1800, 1820, 1850, 1990, 2000, 2260, 2280, 2290, 2300, 2320, 2350, 2380, 2400, 2420, 2500, 2510, 2520*, 2530*, 2540*, 2550*, 2560, 2580*, 2610, 2620, 2650, 2800, 2820, 2900, 3200, 3210, 3220, 3260, 3290, 3300, 3331, 3330, 3340, 3350, 3370, 3390, 3400, 3410, 3420, 3430, 3439, 3440, 3450, 3460, 3470, 3480, 3490, 3570, 3590, 3680, 3690, 3695, 3830, 3840, 3850, 3860, 3890, 3900, 3950, 4060, 4080, 4180, 4460, 4470, 4510, 4550, 4850, 4900, 4940, 4960.

Course fulfills the Humanities or Social Sciences breadth of study requirement: *Course fulfills Cultural Diversity requirement.

The following courses satisfy the state requirement: Pol Sci 1100, 2260, 2280, 2290, 2300, 2320, 2350, 2380, 2400, 3210, 3300, 3330, 3331, 3350, 3370, 3400, 3450, 4470.

1100 Introduction to American Politics (3) [V, SS, ST]
Introduction to basic concepts of government and politics with special reference to the United States, but including comparative material from other systems.

1200 Foundations of Law: An Introduction to Legal Studies (3) [MI, V, SS]
Same as CCJ 1200 and Interdisciplinary 1200. As a broad liberal arts approach to the study of law, this course is designed to familiarize students with legal ideas, legal reasoning, and legal processes. It also provides comparative and historical perspectives on law that will help explain legal diversity and legal change. Finally, it offers opportunities to explore some of the persistent issues in law and legal theory: for example, issues about the sources of law, the responsibilities of the legal profession, or the relative merits of the adversary system.

1450 Introduction to Labor Studies (3) [MI, SS]
Same as Interdisciplinary 1450. This course covers many topics important to the role of unions in the American political system and American society from a labor perspective: institutional structure, collective bargaining strategies. Topics include the role of workers in current and future times, unions' and obstacles for union organizing, recent union campaigns, labor's political role, and the relationship between labor and the media.

1500 Introduction to Comparative Politics (3) [MI, V, SS, CD]

This course introduces students to western and non-western systems. It examines similarities and differences in the basic political ideologies, structures, economies, social institutions and governmental processes of developed and developing countries. It also provides frameworks for understanding the cultures of the world that are the basis for formal economic and political institutions. In addition, the course examines the role of non-state institutions, including trans-national ones, in shaping national policies. It uses case studies from Africa, Asia, Latin America, as well as Europe, to enhance student understanding of comparative politics.

1550 Women and Politics in the Developing World (3) [MI, V, SS, CD]

Women play a central role in the transformation of political, economic, cultural and gender relations in developing nations. This course examines the political role of women in these transformations. In particular, the course examines ways that modernity, universal education, the market economy and globalization have widened the scope of women's public activities; the emergence of social movements driven by the transformation of economic and political roles brought about by the inclusion of women in the political arena; the re-interpretation of religious doctrines, especially those that emphasize women's "return" to the private sphere and legitimate the denial of women's political rights.

1600 Contemporary Political Ideologies (3)

An introduction to the major political ideologies of the world today. Emphasis is placed on democracy, feminism, Marxism, and nationalism.

1800 World Politics (3) [V, SS]

An introduction to the field of international relations, covering such topics as nationalism, power, foreign policy-making, diplomacy, war, arms control and disarmament, interdependence, the regulation of conflict, and other aspects of politics among nations.

1820 Global Issues (3) [MI, SS]

A freshman- and sophomore-level course designed to introduce students to a range of global concerns, including population, hunger, trade, energy, and the environment. The worldwide implications of these and other problems will be considered, as well as their effects on local communities such as St. Louis.

1850 Global Ecology (3) [V, SS]

Must be taken concurrently with Biol 1850 for three hours of biology credit and three hours of political science credit. A course team-taught by the Biology and Political Science departments, combining natural science and social science perspectives in taking a global view of a variety of environmental concerns, such as air and water pollution, climate change, energy use, use and conservation of

natural resources, human population ecology and other issues. Examines the underlying scientific dimension, as well as the political-economic-social aspects of problem-solving at local, national and international levels. Features labs and field trips in addition to lecture and discussion.

1990 The City (3) [MI, V, SS]

Same as Sociol 1999. An interdisciplinary course. Consideration of economic factors, urban institutions, historical developments in urbanization, problems of the inner city, suburbia and the metropolitan area, ethnic groups, stratification, and Psychological implications of urban living. This course is primarily for freshmen and sophomores. It is open to juniors and seniors with the instructor's permission.

2000 Political Analysis (3)

An introduction to political analysis, emphasizing both the logic of inquiry and practical methods. Students learn about the construction and evaluation of theories that relate to real-world politics. They also have an opportunity for hands-on experience with qualitative and quantitative methods including graphics, descriptive statistics, cross-tabular and correlational analysis, hypothesis testing, and computer applications.

2260 Law and the Individual (3) [ST]

Same as CCJ 2226. Prerequisite: Pol Sci 1100, or 1200, or consent of instructor. An examination of the formal and informal aspects and processes of the American judicial system and its effect on the individual. The course will cover criminal and civil law, public and private law, state and federal courts, and the processes by which disputes are transformed into legal actions. Topics include judicial selection and recruitment, plea-bargaining, the impact and implementation of judicial decisions, the examination of a number of substantive areas of law like contracts and torts, and the role of courts in policymaking and dispute resolution.

2280 Judicial Politics and Policy (3) [ST]

Prerequisite: Pol Sci 1100 or 1200, or consent of instructor. This course is an examination of the American state and federal legal systems. Topics examined in this course include an analysis of the structure, organization and function of courts. Emphasis will be placed on the role of juries, judges, attorneys, litigants, and interest groups in the judicial system. The objective of the course is to evaluate courts as political institutions and analyze the policy-making role of judges.

2290 Women and the Law (3) [ST]

Legal position of women in the United States, emphasizing constitutional law, criminal law, domestic relations, and fair employment practice laws.

2300 State Politics (3) [ST]

Prerequisite: Pol Sci 1100 or consent of instructor. An examination of contemporary state politics in the United

States; social, economic, and political determinants of policies; federal-state-local relations; elections, interest groups, and participation; executive, legislative, and judicial institutions and policies, and their impact.

2320 African Americans and the Political System (3) [ST]

Prerequisite: Pol Sci 1100 or consent of instructor.

Examination of the status of African Americans in the context of the American political system. The course will focus on a number of issues, including: attitudes of various publics toward racial concerns; nature of problems in specific policy areas (e.g., unemployment, school desegregation, housing, poverty); representation of African Americans in governmental institutions and the private sector; and the role of African American leadership and civil rights groups in the political process.

2350 Introduction to Urban Politics (3) [ST]

Prerequisite: Pol Sci 1100 or consent of instructor.

Examination of structure and process of politics in the urban community, with emphasis on their relationships to community power structures.

2380 Women in U.S. Politics (3) [ST]

Prerequisite: Pol Sci 1100 or consent of instructor. This course focuses on the relationship between gender and organized politics in the development of women's activism in politics, women United States. Topics to be addressed include the historical as political candidates and elected officials, women's organizations in American politics, women and public policy, women's rights and issues, and women and political leadership. Throughout the class, emphasis will be placed not only on examining the role of women in politics, but also on understanding the role of gender in the construction and evaluation of political institutions, practices and public policies in the United States.

2400 Public Administration (3) [ST]

Prerequisite: Pol Sci 1100 or consent of instructor. Survey of public administration, with reference to organization, financial administration, personnel management, and judicial control of the administrative process.

2420 Introduction to Public Policy (3) [ST]

Prerequisite: Pol Sci 1100 or consent of instructor. Study of differing approaches to understanding the public policy process. Course surveys the application of social science to public issues and problems.

2500 Comparing Different Worlds (3)

This course focuses on the role of political institutions, economic structures and social groups in explaining differences in forms of government and levels of socioeconomic development. It explores in detail one or more of these themes in cases drawn from developing and developed nations.

2510 Comparative Politics of Europe (3)

Prerequisite: Pol Sci 1500 or consent of instructor.

Introduction to the major political systems of Europe. The course will emphasize political culture, political parties, interest groups, and political behavior. It will also focus on political institutions and policy making. While individual countries will be examined separately, the course will also emphasize comparison between systems.

2520 Middle Eastern Politics (3) [CD]

Prerequisite: Pol Sci 1100, or 1500, or consent of instructor. Survey of political movements, governments, and international conflicts in the Middle East. Islam, nationalism, ideologies, and economic systems will be studied. The effects of oil and the military will also be considered.

2530 Political Systems of South America (3) [CD]

Prerequisite: Pol Sci 1500 or consent of instructor. An introduction to the study of the political systems of South America. Examination of the cultural context that has shaped the political, economic, and social development of states in the region.

2540 Political Systems of Mexico, Central America, and the Caribbean (3) [CD]

Prerequisite: Pol Sci 1500 or consent of instructor. An introduction to the study of the political systems of Mexico, Central America, and the Caribbean. Examination of the cultural context that has shaped the political, economic, and social development of these countries.

2550 East Asian Politics (3) [CD]

An introduction to the study of the Chinese and Japanese political systems. Examination of the cultural context that has shaped the path of political development for both states.

2560 Russia and the New Republics (3)

Prerequisite: Pol Sci 1500 or consent of instructor.

Examination of political-economic conditions responsible for the creation, collapse, and reconstruction of the former Soviet Union, with emphasis on new elites and interest groups, problems of democratic transition, ethnic conflict and socio-economic reform.

2580 African Politics (3) [CD]

Prerequisite: Pol Sci 1500 or consent of instructor. An introduction to the nature of societies, governments, and international relations in Africa. The course deals with forms of governance on the continent, regional groupings of states, and persistent conflicts within and among states. Problems of economic underdevelopment, food supplies, health and population trends, and cultural change are analyzed, along with the role of outside major power intervention.

2610 Ancient and Medieval Political Thought (3)

Study of political thought from Plato to Machiavelli.

2620 Modern Political Thought (3)

Study of political thought from Machiavelli to the present.

2650 American Political Thought (3)

History of political thought in the United States from colonial times to the present.

2800 Model United Nations (1-3)

Prerequisite: Consent of instructor. Students in this course will be members of the UM-St. Louis delegation to the Midwest Model United Nations, a "mock UN" roleplaying experience involving various universities representing UN member countries. Students are expected to develop knowledge about the UN and do research on a selected country and issue area (for example, terrorism or economic development). May be repeated up to a maximum of three credit hours.

2820 United States Foreign Policy (3)

Prerequisite: Pol Sci 1100, or 1500, or consent of instructor. Examination of the factors influencing the formation and the execution of United States foreign policy, with a focus on specific contemporary foreign policy issues.

2900 Studies in Political Science (3)

Selected topics in political science.

3090 American Government for the Secondary Classroom (3)

Prerequisites: Tch Ed 3310 & Pol Sci 1100, graduate standing or consent of instructor. Same as Sec Ed 3090. Adapts the themes and subject matter of American government to the secondary classroom and trains teachers in techniques particularly designed to maximize the use of primary sources, foster critical inquiry, and encourage knowledge of subject matter. Particular emphasis will be placed on defining the broad and connecting themes of American government, on expanding bibliography, and on choosing methods of inquiry for use in an interactive classroom. Either Hist/Sec Ed 3257 or 3258 or Pol Sci/Sec. Ed. 3209 must be taken the same semester as Hist/Sec Ed 3255 except with special consent of the Social Studies Coordinator. Can be counted towards the Political Science major requirement, but not the American Politics subgroup. Counts towards Social Studies Certification.

3200 Constitutional Law (3) [ST]

Prerequisite: Pol Sci 1100, or 1200, or consent of instructor. Study of leading American constitutional principles regarding legislative, executive, and judicial power, federalism, the commerce clause, and economic due process as they have evolved through the important decisions of the U.S. Supreme Court.

3210 Civil Liberties (3) [ST]

Prerequisite: Pol Sci 1100, or 1200, or 3200, or consent of instructor. Civil rights in the American constitutional context, emphasizing freedom of religion, freedom of

expression, minority discrimination, and the rights of defendants.

3220 Labor Law (3)

Prerequisite: Consent of instructor. In this course, participants will examine the role of government in the regulation of labor-management relations in the United States. While the focus of the course will be on federal laws regulating private sector labor relations, parallel issues addressed in the Railway Labor Act and state public sector labor relations law will also be covered. Specific topics include the legal framework for the organization of workers, definition of prohibited or unfair labor practices of employers and unions, legal regulation of the collective bargaining process, regulation of the use of economic weapons in labor disputes, enforcement of collective bargaining agreements and the regulation of internal trade union activities.

3260 The Supreme Court (3) [ST]

Prerequisite: Pol Sci 1100, or Pol Sci 1200, or consent of instructor. An examination of the role, function and assertion of power by the U.S. Supreme Court in our constitutional democracy. Topics include historical overview of the Supreme Court, the process of selecting Supreme Court Justices, life in the Court, Supreme Court decision making, Supreme Court policymaking, implementation and impact of Court decisions and the role of the Supreme Court as a national policymaker. This course fulfills the state requirement.

3290 Studies in Public Law (3)

Prerequisite: Pol Sci 1100, or 1200, or consent of instructor. Selected topics in public law. May be repeated.

3300 The American Presidency (3) [ST]

Prerequisite: Pol Sci 1100 or consent of instructor. Study of the constitutional, political, legislative, and administrative roles played by the American chief executive in the development of public policy.

3330 Introduction to Political Behavior (3) [ST]

Prerequisite: Pol Sci 1100 or consent of instructor. An introduction to political behavior employing perspectives from both political psychology and political sociology. Subjects include political socialization, the character of public opinion, citizen participation, group dynamics, the social determination of reality, and the underlying bases of leadership and authority.

3331 Congressional Politics (3) [ST]

Prerequisite: Pol Sci 1100 or consent of instructor. An examination of the Congress of the United States, its history and evolution, its contemporary politics, and its role in the national policy-making process. Topics include candidate recruitment, campaigns and elections, representation, committees, legislative leadership, roles and norms, voting alignments, lobbyists and interest groups, oversight of administration, and House-Senate

comparisons. The role of Congress in foreign policy, economic policy, and social-welfare policy will be examined.

3340 Politics and the Media (3)

Prerequisite: Pol Sci 1100 or consent of instructor. An analysis of the role the media play in shaping American political life. The first part of the course examines the organizational structures, the economic and psychic incentives, and the social and professional norms that define how television and newspapers report news about public affairs. The second part then considers the nature of a mass-communications society by looking at how reality is defined, the susceptibility of mass publics to persuasion and propaganda, the peculiar form of media election campaigns, and the manner in which the media link changes the basic character of a citizenry.

3350 Political Parties and Elections (3) [ST]

Prerequisite: Pol Sci 1100 or consent of instructor. An examination of the part played by parties and elections in American politics. Topics include the historical development of the party system, the organization and management of political parties and campaigns, contemporary changes in the nature of electoral politics, and the effects of elections on public policy.

3370 Mock Constitutional Convention (3) [ST]

Prerequisite: Pol Sci 1100 or consent of instructor. An active exercise in political imagination. Students make proposals and bargain with each other to write a constitution for the United States in the 21st century. Students are encouraged to develop new views of what is a desirable society and to gain a richer appreciation of how practical politics are conducted. The course is designed for majors and nonmajors who enjoy political discussion and have a genuine interest in political life.

3390 Studies in American Politics (3)

Prerequisite: Pol Sci 1100 or consent of instructor. Selected topics in American politics. May be repeated.

3400 Bureaucratic Politics (3) [ST]

Prerequisite: PolSci 1100 or consent of instructor. Examination of the policy-making process within public organizations and the forces influencing the making of bureaucratic policy. Study of the role of the bureaucracy as one of several "actors" in the larger policy process.

3410 Politics of Business Regulation (3)

Prerequisite: Pol Sci 1100 or consent of instructor. This course will examine the role of governmental decision-making processes in regulatory policy, including congressional politics, presidential initiatives, administrative rulemaking, and society wide constraints. The impact of government regulation and alternative means for accomplishing regulatory goals (e.g., mandatory standards or incentive systems) will also be considered. Bureaucratic incentives and the role of the courts will be

emphasized. Selected areas of regulation which may be covered include: equal employment policies, occupational health and safety policies, environmental policies, employment policies, and urban policies.

3420 Public Personnel Management (3)

Prerequisite: Pol Sci 1100, or 2400, or consent of instructor. A study of personnel practices in the public sector, including recruitment, job development, labor relations, and administration of equal employment/affirmative action programs.

3430 Union Leadership and Administration (3)

Prerequisite: Consent of instructor. This course will focus on the roles and challenges of union leadership in a changing environment. Topics will include the union leader's roles as representative, organizer and educator as well as administrative responsibilities within the union and the relationship with enterprise management in both adversarial and participatory situations. Options for leadership style and organizational models will be discussed and explored in both theory and practice. Leaders will develop their skills of motivation, speaking, strategic planning and managing complex campaigns and diverse organizations.

3439 Studies in Policy Formation (3)

Prerequisite: Consent of instructor. Selected topics in policy formation. May be repeated.

3440 Public Budgeting (3)

Prerequisite: Pol Sci 1100 or consent of instructor. Budgeting is the study of "who gets what" and who pays for it. This course examines the administration and politics of federal, state, and local government budgets. Students gain experience in interpreting budget documents and making budget choices, using electronic and other resources.

3450 Urban Administration (3) [ST]

Prerequisite: Pol Sci 1100 or consent of instructor. Study of administrative machinery and practices of metropolitan government, how metropolitan areas organize themselves to provide services, how urban policies are made and implemented, how budgeting and personnel recruitment processes operate, and how these relate to urban policies.

3460 The Politics of Poverty and Welfare (3)

Prerequisite: Pol Sci 1100 or consent of instructor. An examination of the structure of income inequality in the U.S. and public policies designed to redistribute wealth and to treat poverty. The history of welfare programs, the growth of the welfare state, and attempts to cut social spending are closely examined.

3470 Collective Bargaining (3)

Prerequisite: Consent of instructor. This course involves a study of collective bargaining processes including contract negotiations, contract administration, and methods for the

resolution of bargaining disputes. Both theoretical and applied issues in collective bargaining will be addressed. Specific topics include the economic determination of bargaining power, legal constraints on the bargaining process, negotiations strategies and techniques, and the use of mediation and arbitration in the resolution of bargaining disputes.

3480 Environmental Politics (3)

Prerequisite: Pol Sci 1100 or consent of instructor. This course examines the process of environmental policy-making and key environmental issues. Topics include national and international policies toward air and water pollution, energy use, solid and toxic waste disposal, global warming, overpopulation, and wilderness and wildlife conservation.

3490 Studies in Public Administration (3)

Prerequisite: Pol Sci 1100, or 2400, or consent of instructor. Selected topics in public administration. May be repeated.

3570 Gender, Race and Public Policy (3)

Prerequisite: Pol Sci 1100, or 1500, or consent of instructor. Raises the question as to whether "more women in politics," stemming from diverse economic, racial, ethnic backgrounds and age groups, will necessarily result in better policies for women and men. Compares gendered and racialized impacts of a wide array of public policies (in the areas of education, employment, health care, welfare, and reproductive technologies) across a broad sample of advanced industrial societies. Analyzes the "empowerment" potential of new equality policies being generated at the international and supranational levels (e.g., in the UN and the European Union).

3590 Politics, Leadership and the Global Gender Gap (3)

Prerequisites: Pol Sci 1500 or consent of instructor. Compares women's day-to-day leadership and participation patterns across a wide variety of political-economic contexts, emphasizing their performance as elective and administrative office holders. It examines the experiences of individual female leaders, long-term nomination and recruitment strategies, and the larger political opportunity structure awaiting women beyond the year 2000.

3595 Studies in Comparative Politics (3)

Prerequisite: Pol Sci 1500 or consent of instructor. Selected topics in comparative politics. May be repeated.

3680 Feminist Political Theory (3)

A study of the history of feminist political thought with an emphasis on contemporary concerns. Issues to be considered include the feminist theories of the state, gender and justice, and equality and difference.

3690 The Marxist Heritage (3)

Same as Phil 3369 and ID 3690. Study of Marx and leading Marxists. Designed to evaluate their influence on recent political, economic, and social thought and institutions.

3695 Studies in Political Theory (3)

Prerequisite: Pol Sci 1100, or 1500, or consent of instructor. Selected topics in political theory. May be repeated.

3830 International Political Economy (3)

Prerequisite: Introduction to international political economy. In particular, it will focus on the politics of international trade, finance, and investment. It will analyze the relationships between developed and developing countries, and it will assess the relative usefulness of alternative frameworks for studying international political economy.

3840 European International Relations (3)

Prerequisite: Pol Sci 1100, or 1500 or consent of instructor. European international relations since World War II. Emphasis upon developments from the Cold War to Détente emphasizing such concepts as containment, Truman Doctrine, Marshall Plan, NATO, WTO, community building, force structures, and security.

3850 International Organizations and Global Problem Solving (3)

Prerequisite: Pol Sci 1100 or 1500, or consent of instructor. Introduction to the study of international organization. The course focuses on relationships between nation-states and "nonstate" actors (e.g., global intergovernmental organizations such as the United Nations, and nongovernmental organizations such as multinational corporations) in world politics and on the role of international institutions in such problem areas as economic development, management of resources, and control of violence across national boundaries.

3860 Studies in War and Peace (3)

Prerequisites: Junior standing and Pol Sci 1100, or 1500, or consent of instructor. Exploration, development, and testing of theories about the causes and consequences of war, peace, and conflict among nations. A broad range of literature on war and peace will be reviewed and applied to crisis situations in the international system.

3890 Studies in International Relations (3)

Prerequisite: Pol Sci 1100, or 1500, or consent of instructor. Selected topics in international relations. May be repeated.

3900 Special Readings (1-10)

Prerequisite: Consent of instructor. Independent study through readings, reports, and conferences. May be repeated.

3940 Public Affairs Internship (1-6)

Prerequisites: Junior standing and consent of instructor. Independent study involving work with an appropriate public or private agency. A maximum of 6 credit hours may be earned.

3950 Senior Seminar in Political Science (3)

Prerequisites: Senior standing and consent of instructor. Required of all political science majors in their last year of course work as an integrative capstone experience. Emphasis is on student-faculty interaction in a seminar format designed to engage upper-level students in a critical examination of a broad theme in political science, leading to the production of a major research paper. Topics vary. May be repeated. This course is not available for graduate student credit.

4040 Survey Research Practicum (3)

Same as Econ 4140 and Sociol 4040. Prerequisites: Junior standing and consent of the instructor. The execution of a sample survey, including establishing study objectives, sampling, questionnaire construction, interviewing, coding, data analysis, and presentation of results.

4060 Theory of Decisions and Games (3)

Prerequisite: Six hours of Philosophy and junior standing, Pol Sci 6401 (or the equivalent) or consent of instructor. Same as Phil 4465. A study of rational decision making, including games against nature, zero-sum games and social choices. Topics will include the following: expected utility maximization, the Prisoner's Dilemma, Nash equilibria, and Arrow's theorem on the impossibility of a social welfare function. Parts of the course are technical in nature; a prior course in mathematics (e.g., finite mathematics, calculus, statistics or an economics course with a mathematical component), symbolic logic, or some other course with comparable mathematical content.

4080 Program Evaluation (3)

Prerequisites: Pol Sci 1100, or 2400, and one of the following: BA 3300, Sociol 3200, CCJ 2220, or consent of instructor. Study of techniques and applications for evaluating the impact of public programs.

4180 Social Choice in Political-Economic Systems (3)

Prerequisites: Two courses in Economics, Political Science, or Sociology. A study of the mechanisms of social choice from the standpoint of individuals and institutions maximizing their objectives. This area draws on work done by sociologists, political scientists, and economists.

4460 Urban Planning and Politics (3) [ST]

Prerequisite: Pol Sci 1100, or 2400, or consent of instructor. Examination of the political processes of urban areas as they relate to the planning of services and facilities.

4470 Introduction to Environmental Law and Policy (3)

Prerequisite: Senior or graduate standing or consent of instructor. Survey of the most prominent federal laws governing environmental compliance and pollution control. Examines laws applicable to environmental impact statements, air pollution, water pollution, and hazardous waste. Addresses policy concerning the relative merits of using technological capabilities as compared with health risks in setting environmental standards. Discusses the need for environmental regulation to protect societal resources.

4510 Comparative Public Policy and Administration (3)

Prerequisite: Pol Sci 1500 or consent of instructor. A comparative study of the characteristics of public administrators, their institutions and environments in Western democratic, developing nations, and communist political systems.

4550 Democratization in Comparative Perspective (3)

Prerequisite: Pol Sci 1500 or consent of instructor. This course explores the meaning of democracy and the nature of transitions to democracy, particularly the processes of political liberalization and democratization that follow the breakdown of authoritarian rule. Cases will be drawn from Latin America and other regions.

4850 International Law (3)

Prerequisite: Pol Sci 1100, or 1500, or consent of instructor. Study of the international legal system, including the content and operation of the laws of war and peace, how law is created and enforced with regard to the oceans and other parts of the globe, and the relationship between international law and international politics.

4900 Topics in Political Science (3)

Prerequisites: Pol Sci 1100 or consent of Instructor. Selected topics in political science.

4911 Management Issues in Nonprofit Organizations: Staff Management Issues (1)

Prerequisite: Junior Standing. Same as SW 4911 and PPA 4911. This course addresses issues involved in managing staff in nonprofit organizations. The course will cover the following topics: fundamentals of staff supervision; balancing supervisory processes with counseling and coaching; selecting, hiring, evaluating, and terminating staff; and legal issues that affect these processes.

4912 Management Issues in Nonprofit Organizations: Legal Issues in Governing and Managing Nonprofit Organizations (1)

Prerequisite: Junior Standing. Same as SW 4912 and PPA 4912. This course addresses legal issues involved in managing and governing nonprofit organizations. The course will cover the following topics: The Board as steward of the organization; Director and officer liability; tax laws concerning charitable giving; legal issues in

managing staff and volunteers (e.g., hiring, evaluating, and terminating employees); Missouri nonprofit law.

4913 Management Issues in Nonprofit Organizations: Financial Issues (1)

Prerequisite: Junior Standing. Same as SW 4913 and PPA 4913. This course addresses financial issues involved in governing and managing nonprofit organizations. The course will cover the following topics: Cash flow analysis; budgeting; fund accounting; cost accounting (determining costs for programs and services); understanding and using standard financial statements, including balance sheets, cash flow statements, statements of activity, and operating and capital budgets.

4940 Leadership and Management in Nonprofit Organizations (3)

Same as PPA 4940, SW 4940, and Sociol 4940. Prerequisite: Junior standing. Addresses the role and scope of the independent sector in the United States, as well as the leadership and sector, the role of volunteerism in a democratic management of nonprofit organizations within that sector. Topics include the economic and political scope of the independent society, and the role and scope of philanthropy. Topics include the dynamics, functions and membership voluntary organization management and leadership structure of NPOs, especially staff-board and other volunteer relations; governance and management of NPOs; resource mobilization; and program development management and evaluation.

4960 American Philanthropy and Nonprofit Resources Development (3)

Prerequisite: Junior standing or consent of instructor. Same as SW 4960 and PPA4960. This course addresses the history, philosophy, roles and scope of philanthropy in the United States, including its role in the nonprofit, voluntary sector. It further examines the contemporary forces which impact philanthropy and charitable giving, both by institutions and individuals. The course examines the effective planning and management of development programs (e.g., annual giving), fund raising vehicles (e.g., mail solicitations) and the fund raising process, from planning through donor relations.

6400 Analytic Perspectives in Political Science (3)

An introduction to the graduate study of political science. The course presents a number of analytic approaches to the scientific examination of a wide variety of political phenomena.

6401 Introduction to Policy Research (3)

Same as PPA 6010. Procedures for testing explanations, including research design, principles of measurement, probability sampling, methods of data collection, and techniques for analyzing data.

6402 Intermediate Techniques in Policy Research (3)

Prerequisites: Graduate standing and Pol Sci 6401. Elementary distribution theory, statistical inference, and an introduction to multiple regression. Emphasis on practical applications.

6403 Advanced Techniques in Policy Research (3)

Prerequisites: Graduate standing and Pol Sci 6402. Selected topics in policy research emphasizing forecasting, modeling, and estimation.

6404 Multi-Method Research Design (3)

Prerequisites: Pol Sci 6403 or consent of instructor. Develops policy research skills that combine qualitative and quantitative social science tools and applies an appropriate mix of these tools to specific policy problems. Topics include alternative approaches to causal analysis, levels of analysis, triangulation from a variety of qualitative and quantitative research techniques, building contextual effects into multiple research projects, techniques for assessing alternative program theories and clarifying implicit assumptions, and meta-analysis of secondary data sources.

6405 Directed Readings in Research Methods (1-10)

Independent study through readings, reports, research projects, and conferences.

6406 Survey Research Methods (3)

Prerequisites: An introductory statistics course (such as Soc. 3220 or consent of instructor. A course on the principles and procedures for conducting survey research. Topics include: forming questions and scales, survey design, sampling methods, data preparation and analysis, and presentation of results.

6410 Introduction to Policy Analysis (3)

Same as PPA 6000. Systematic development of a critical/analytic base for dealing with public policy.

6411 Seminar in Policy Analysis (3)

Prerequisite: Pol Sci 6410. Evaluation and criticism of contemporary public policies in selected areas.

6414 Topics in Public Policy Analysis (3)

Intensive analysis of a specific public policy area such as housing, budgeting, integration, planning, metropolitan reorganization. Course may be repeated.

6415 Directed Readings and Research in Public Policy (1-10)

Same as PPA 6150. Prerequisite: Consent of Instructor. Independent study through readings, reports, research projects, and conferences. May be repeated for credit, provided the subject matter is different.

6416 Family Policy (3)

Prerequisites: SW 5200 or equivalent or consent of instructor and graduate standing. Same as SW 5200 and

Sociol 6200. Examines policy development, implementation and impact of social policies on children, youth, and families. International, national, and state policies that affect basic family needs will be the focus, including topics such as economic support, health care, child care and protection, and child and youth development. Unintended consequences of existing policies on the family will be examined as well as future policy directions.

6417 Income and Pension Policy for the Aged (3)
Prerequisite: Graduate standing or consent of instructor. Same as Ger 6417 and PPA 6170 and SW 6417. (MSW student normally take the social policy foundation course prior to enrolling in this course.) Examination of federal, state, and local policies that affect the economic well-being of the elderly. The development of social security programs and pension programs is explored within historical context. Emphasis is placed on the analysis of current policy problems and proposed solutions.

6418 Social and Economic Development Policy (3)
Prerequisites: SW 5200 or equivalent or consent of instructor and graduate standing. Same as SW 6250. Examines major trends and alternatives in social and economic development policy in state, national, and international perspectives. Students will develop skills in policy analysis and development.

6419 Cases in Public Policy Analysis (3)
Intensive analysis of several public policy cases. Cases will be problem-solving exercises in areas such as personnel management, program financing, budget preparation, and planning.

6420 Proseminar in Public Law (3)
Prerequisite: Graduate standing. Study of judicial systems and processes (judges, courts, litigants, and juries) and evaluation of legal policies (compliance, impact, and deterrence).

6421 Seminar in Public Law (3)
Research problems and designs, models and approaches to the study of public law. May be repeated for credit when the subject matter is different.

6422 Law, Courts, and Public Policy (3)
Prerequisite: Graduate standing. Analysis of public policies, as represented by laws, court decisions, and agency adjudication, judicial review, discrimination, affirmative action, urban planning, social welfare, intergovernmental relations, environmental law, freedom of information, and privacy concerns will be surveyed. The relationship between courts and the Constitution, courts and legislatures, and courts and the administrative process will be stressed.

6425 Directed Readings and Research in Public Law (1-10)
Independent study through readings, reports, research projects, and conferences.

6430 Proseminar in American Politics (3)
Study of individual and group political behavior, including socialization, participation, consensus formation, representation, and legislative and judicial behavior.

6431 Seminar in American Politics (3)
Research problems and design in American political process and behavior. May be repeated for credit when the subject matter is different.

6432 Intergovernmental Relations (3)
Prerequisite: Graduate standing. In the United States nearly all domestic policy is implemented through an extremely complex intergovernmental system in which the federal government administers grants-in-aid or sets standards for states and localities that administer programs. This course will analyze this policy system by: (1) tracing the origins and evolution of American federalism; (2) analyzing the grants-in-aid system, especially the New Deal; (3) comparing the United States system with federal and unitary policy systems in other industrialized nations.

6433 Elections, Public Opinion, and Public Policy (3)
Prerequisite: Graduate standing. This course provides an opportunity for graduate students to examine electoral politics and democratic governance. It includes an historical review of the dynamics of the American party system, paying particular attention to the ways that politicians translate social and economic change into the political system. It surveys the scientific community's understanding about mass political behavior, covering such topics as the nature of political beliefs, partisanship, political trust, tolerance, ideology, motives for participation, and so on. Then it gives particular attention to the instruments that seem to shape public opinion - the family, the social peer group, and the mass media. Finally, it presents analyses of the contemporary political system in terms of the links between citizen preferences, electoral outcomes, and the government's provision of public policies.

6435 Directed Readings and Research in American Politics (1-10)
Independent study through readings, reports, research projects, and conferences.

6440 Proseminar in Public Administration (3)
Same as PPA 6400. Examination of major approaches to analyzing public policies and their administration. Emphasis is on the effects of administrative organization and procedures on policy decisions and their impacts. Specific topics may include administrative accountability, intergovernmental relations, public-private interaction, implementation processes, bureaucratic expertise, the legal

environment of public policy administration, and public service and merit issues.

6441 Seminar in Public Administration (3)

Research problems and design in public administration. May be repeated for credit when the subject matter is different

6442 The Policy Process (3)

Prerequisite: Graduate standing. The course will require a major research project using federal documents and other primary sources of information about the United States policy process. Topics will include the sources of public policy; the policy agenda; policy design, legitimation, and implementation.

6443 Health Care Policy (3)

Prerequisite: Graduate standing or consent of instructor. Same as PPA 6430 Ger 6443 and SW 6443. (MSW students will normally take the social policy foundation course before enrolling in this course). Survey course examining current issues in health policy that face the nation. Policies are placed in a historical context to show how issues have been influenced by different political and economic conditions. Secondary consequences and limitations of current trends in health policy are explored.

6444 Seminar in Public Policy and Aging (3)

Same as PPA 6444 and Ger 6444. Prerequisite: Consent of instructor. The study of specialized issues and methods related to federal, state, and local policies that affect the elderly. Potential policy areas to be covered include housing, taxation, mental health, transportation, etc. May be repeated for credit, provided the subject matter is different.

6445 Directed Readings and Research in Public Administration (1-10)

Independent study through readings, reports, research projects, and conferences.

6446 Selected Topics in Health Care Policy (3)

Same as PPA 6460 and Sociol 6446. Prerequisite: Consent of instructor. The study of specialized issues and methods relating to health care policy. May be repeated for credit, provided the subject matter is different.

6447 Seminar in Public Policy (3)

Prerequisite: Graduate Standing. Research seminar aimed at producing a substantial research project in the areas of public policy processes and outcomes. The seminar may focus on specific policy processes such as agenda-setting, policy formulation, or policy adoption, or it may focus on the politics of specific policy areas such as environmental programs, social legislation or regulation. May be repeated for credit when the subject matter is different.

6448 Political Economy and Public Policy (3)

Prerequisite: Graduate standing. This course examines political economy in its contemporary manifestations as public choice and as the study of the ways in which institutional power shapes economic policies and performance. The course explores the origins and major concepts of political economy, the institutions of economic policy-making and economic policies in the U.S. It emphasizes the consequences of budget constraints, inflation, unemployment, and sectoral decline on the design and administration of public programs at all levels of government.

6449 Human Resources in the Public Sector (3)

Prerequisite: PPA 6600 or consent of instructor. Same as SW 6449 and PPA 6490. Presents an overview of personnel and labor relations in the public sector. Particular emphasis placed on issues which are unique to the public sector, such as the merit system, the questions of representative bureaucracy and the constraints of personnel in the nonprofit sector. The topics include personnel reforms in the federal sector, equal employment and affirmative action policies, testing, selection, hiring, comparable worth, job evaluation, and labor relations including grievance arbitration and collective bargaining.

6450 Proseminar in Comparative Politics (3)

Classification and topology of political systems; structural-functional analysis; political culture, ideology, affiliation and participation; decision-making processes; political roles; organization of authority.

6451 Seminar in Comparative Politics (3)

Research problems and design in comparative politics. May be repeated for credit when the subject matter is different.

6452 Public Policy of Conservation and Sustainable Development (3)

Same as Biol 6250. Prerequisites: Graduate standing in Political Science or Biology and consent of instructor. Prior course in ecology recommended. This course will introduce the student to concepts and techniques for formulating, implementing, and analyzing public policy with an emphasis on environmental concerns, conservation, and sustainable development. The course will be team-taught by a political scientist and a biologist. Course materials will include case studies that demonstrate the special problems of environmental policymaking in developing and developed economies.

6455 Directed Readings and Research in Comparative Politics (1-10)

Independent study through readings, reports, research projects, and conferences.

6457 Seminar in East Asian Politics (3)

Prerequisite: Graduate standing or consent of instructor. Study of concepts and research on the political culture,

ideology, groups, political processes and institutions, and policy outcomes in the Chinese and/or Japanese political systems.

6458 Seminar in European Politics (3)

Prerequisite: Graduate standing or consent of instructor. Study of national political cultures, ideologies, regional security issues, national as well as supranational political institutions, and policy processes in Europe, with emphasis on post Cold-War developments.

6459 Seminar in Latin American Politics (3)

Prerequisite: Graduate standing or consent of instructor. This course focuses on the twin issues of economic and political change in Latin America. It explores shifts from open free-market models and provides tools to assess recent transitions from authoritarianism to democracy. Country cases include Mexico, Brazil, Argentina, Chile. Two Central American countries, El Salvador and Nicaragua plus Cuba also will receive attention.

6460 Proseminar in Political Theory (3)

Study of concepts and problems in normative political theory.

6461 Seminar in Political Theory (3)

Research problems and design in political theory. May be repeated for credit when the subject matter is different.

6462 Political Theory and Public Policy (3)

This course covers the ideological and ethical context of public policy and public policy analysis. Special attention is given to the way in which different contexts produce both different public policy and different ways of understanding public policy. Questions addressed include accountability, professionalism, freedom, justice, equality, and, in general, ethical issues faced by both the policy maker and the policy analyst.

6465 Directed Readings and Research in Political Theory (1-10)

Independent study through readings, reports, research projects, and conferences.

6470 Proseminar in Urban Politics (3)

Examination of the relationships among the social, economic, and political systems of urban areas. Urban political structure, patterns of influence, political participation, and communication and political change. Special attention to problems of access to and control of urban political systems.

6471 Seminar in Urban Politics (3)

Research problems and design in urban and regional politics. May be repeated for credit when the subject matter is different.

6475 Directed Readings and Research in Urban Politics (1-10)

Independent study through readings, reports, and conferences.

6480 Proseminar in International Relations (3)

Examination of various approaches to the study of international politics and foreign policy, focusing on studies of conflict, decision making, international political economy, and related topics. Included are realist, idealist, and Marxist perspectives.

6481 Seminar in International Relations (3)

Research problems and design in international politics. May be repeated for credit when the subject matter is different.

6482 International Political Economy (3)

Prerequisite: Graduate standing. This course will examine the theoretical and policy issues of international political economy. In particular, it will focus on the politics of international trade, finance and investment. It will also analyze the themes of interdependence, hegemony, and dependency, as well as consider relations between developed and developing countries. Finally, the relative usefulness of liberal, Realist and Marxist approaches to the study of international political economy will be weighed.

6485 Directed Readings and Research in International Relations (1-10)

Independent study through readings, reports, research projects, and conferences.

6488 Studies in International Relations (1-6)

Prerequisite: Graduate standing. Selected topics in international studies. May be repeated for credit provided the topic of the course is different each time.

6490 Strategic and Program Planning for Nonprofit Organizations (3)

Prerequisites: Graduate standing or consent of instructor. Same as PPA 6550 and SW 6491. Strategic and program planning enable an organization to concentrate on efforts and set priorities guided by a mission, a vision, and an understanding of its environment. Focus is on preparing a strategic plan and a program plan for a nonprofit organization and analyzing an organization's ability to deliver goods and/or services to its constituents in today's economic, social and political climate.

6494 Thesis Research (1-10)

Arranged.

6495 Internship (1-6)

Independent study involving work with an appropriate public or private agency.

7499 Dissertation Research (1-10)

Arranged

Department of Psychology

Faculty

Robert J. Calsyn, Professor*, Chairperson
Ph.D., Northwestern University
Gary K. Burger, Professor* Emeritus
Ph.D., Loyola University
James A. Breauth, Professor*+
Ph.D., Ohio State University
Michael Harris, Professor*+
Ph.D., University of Illinois-Chicago
Robert N. Harris, Clinical Professor*
Ph.D., University of Kansas
Edmund S. Howe, Professor Emeritus
Ph.D., University of London
Alan G. Krasnoff, Professor Emeritus
Ph.D., University of Texas
Samuel J. Marwit, Professor*
Ph.D., State University of New York at Buffalo
Miles L. Patterson, Professor*,
Ph.D., Northwestern University
Jayne E. Stake, Professor*
Ph.D., Arizona State University
George T. Taylor, Professor*, Director,
Doctoral Program in Behavioral Neuroscience
Ph.D., University of New Mexico
Brian Vandenberg, Professor*
Ph.D., University of Rochester
James T. Walker, Professor Emeritus
Ph.D., University of Colorado
Dominic J. Zerbolio, Jr., Professor Emeritus
Ph.D., Michigan State University
Carl Bassi, Associate Professor*
Ph.D., Vanderbilt University
Steven E. Bruce, Associate Professor,
Ph.D., Virginia Commonwealth University
Tara Galovski, Research Associate Professor
Ph.D., University of Albany-State University
Of New York
Michael G. Griffin, Associate Professor*
Ph.D., University of Missouri-St. Louis
Director, Center for Trauma Recovery
Therese M. Macan, Associate Professor*
Director, Doctoral Program in Industrial/
Organizational Psychology
Ph.D., Rice University
Paul W. Paese, Associate Professor*,
Ph.D., University of Illinois
Jennifer Siciliani, Affiliate Associate Professor*
Director, Undergraduate Advising
Ph.D., University of Tennessee-Knoxville
Ann M. Steffen, Associate Professor*,
Director, Doctoral Program in Clinical Psychology
Ph.D., Indiana University
Mark E. Tubbs, Associate Professor*,
Ph.D., University of Houston
Barbara Bucur, Assistant Professor
Ph.D., University of Akron

Terri D. Conley, Assistant Professor,
Ph.D., University of California – Los Angeles
Thomas D. Fletcher, Assistant Professor
Ph.D., Old Dominion University
Laurie A. Greco, Assistant Professor
Ph.D., West Virginia University
Robert H. Paul, Assistant Professor
Ph.D., University of Oklahoma Health Sciences
Center
Matthew J. Taylor, Assistant Professor
Ph.D., University of Missouri-St. Louis
Kamila S. White, Assistant Professor
Ph.D., Virginia Commonwealth University
Dyan W. Harper, Adjunct Professor,
Ph.D., Northern Illinois University
Gary A. Morse, Adjunct Professor
Ph.D., University of Missouri-St. Louis
Larry O'Leary, Adjunct Associate Professor
Ph.D., Saint Louis University
John W. Rohrbaugh, Adjunct Associate Professor
Ph.D., University of Illinois-Urbana Champaign
David E. Smith, Adjunct Associate Professor
Ph.D., Colorado State University
Alene S. Becker, Adjunct Assistant Professor
Ph.D., University of Missouri-St. Louis
Lee Konzak, Adjunct Assistant Professor
Ph.D., University of Missouri-St. Louis
Sandra K. Seigel, Adjunct Assistant Professor
Ph.D., Saint Louis University
Mary K. Suszko, Adjunct Assistant Professor
Ph.D., University of Missouri-St. Louis
David F. Wozniak, Adjunct Assistant Professor
Ph.D., Washington University

* members of graduate faculty

+ Primary appointment in the College of Business
Administration

' Primary appointment in College of Optometry

Primary appointment in Kathy J. Weinman Children's
Advocacy Centre

General Information

Psychology Undergraduate Advising Office

Undergraduate psychology majors and other students interested in majoring or minoring in psychology are encouraged to visit the Psychology Undergraduate Advising Office (110 Stadler) to receive specific information on degree requirements and course offerings, discuss questions about career options, and receive information about graduate work in Psychology. Students will minimize waiting time and will be assured one-to-one attention from an advisor by calling to schedule an appointment ahead of time. Office hours for the Psychology Undergraduate Advising office as well as additional information for psychology majors can be obtained by e-mailing : psy_advising@umsl.edu.

Career Outlook

The undergraduate major in Psychology can provide the foundation for further training in psychology at the graduate level, provide the background necessary for graduate training in other fields such as social work and counseling, or provide the liberal arts background necessary for entry level positions in many fields such as business, communication, and some human service and health care positions. For more career information please schedule an appointment with an adviser in the Psychology Undergraduate Advising Office (Room 110 Stadler, psy_advising@umsl.edu). To function specifically as a psychologist, a graduate degree is required. Students with such an interest should plan for this additional training. Much of this preparation must take place during the student's undergraduate studies. For additional information, visit the American Psychological Association web site (www.apa.org/students).

Facilities

The department has several animal and human experimental laboratories, equipped with a wide range of psychophysiological equipment. The department also operates three clinics (Community Psychological Service, the Center for Trauma Recovery, and Children's Advocacy Services of Greater St. Louis) which provide training opportunities for the doctoral students in the clinical psychology program as well as providing psychological assessment and treatment services for citizens in the region.

Undergraduate Programs: Overview**Bachelors Degree**

The Psychology department offers work leading to the Bachelor of Arts (BA) degree in Psychology.

Minor in Psychology

The department offers a minor in Psychology to students who have a special interest in this field but wish to major in another discipline.

2+3 B.A. in Psychology and M.S. in Gerontology

This is an accelerated program which allows students to receive a bachelors degree in psychology and masters degree in gerontology after completing 138 credit hours in a carefully prescribed program. A full description of program requirements and procedures is available from the Psychology department or from the Gerontology Program office.

Graduate Programs: Overview**Masters Degree**

The department offers a terminal M.A. in General Psychology.

Doctoral Degrees

The department offers three options within its Ph.D. Program: Clinical Psychology, Behavioral Neuroscience, and Industrial/Organizational Psychology.

Graduate Certificate in Trauma Studies

This is an 18 credit hour graduate certificate program.

Clinical Psychology Respecialization-Advanced Graduate Certificate Program

This program is designed for individuals who already have a doctorate in psychology who wish to receive specialty training in clinical psychology.

Undergraduate Programs in Depth**General Education Requirements**

Majors must satisfy the university and college General Education Requirements. Courses in Psychology may be used to meet the social sciences requirement.

Requirements for the Minor

Candidates must complete a minimum of 15 hours of courses taught by or cross-listed with the Psychology Department, including at least 6 hours at the 3000 or 4000 level. Candidates must have a cumulative grade point average of 2.0 or better in the minor. Psychology courses taken on a satisfactory/unsatisfactory basis may not be applied to the minor.

Bachelor of Arts in Psychology

At least 31, but no more than 45, hours must be completed in courses taught by or cross listed with the Psychology Department. Candidates must have a cumulative grade point average of 2.0 or better in the major. Psychology courses taken on a satisfactory/unsatisfactory basis may not be applied to the major.

The following courses (13 credit hours) are required:

Psych 1000, Careers in Psychology
Psych 1003, General Psychology
Psych 2201, Psychological Statistics
Psych 2219, Research Methods
Psych 4999, Integrated Psychology

In addition to the required courses, at least one class must be selected from the classes listed for each of the following three core areas of psychology.

Biopsychology/Cognitive area (3 credit hours):
Psych 2211, Introduction to Biological Psychology or
Psych 2212, Principles of Learning

Clinical area (3 credit hours):
Psych 2216, Personality Theory or
Psych 2245, Abnormal Psychology

Social/Development area (3 credit hours):
Psych 2160, Social Psych or